


**STATE OF NEW HAMPSHIRE  
INTER-DEPARTMENT COMMUNICATION**

<b>FROM:</b>	 Matt Urban Chief, Operations Mgmt. Section	<b>DATE:</b>	October 3, 2018
		<b>AT (OFFICE):</b>	Department of Transportation
<b>SUBJECT</b>	Dredge & Fill Application Derry-Londonderry, 13065		Bureau of Environment
<b>TO</b>	Gino Infascelli, Public Works Permitting Officer New Hampshire Wetlands Bureau 29 Hazen Drive, P.O. Box 95 Concord, NH 03302-0095		

Forwarded herewith is the application package prepared by Fuss & O'Neill, Inc. for NH DOT for the subject Major impact project. This project is classified as Major per Env-Wt 303.02(c). The Towns of Derry and Londonderry, New Hampshire, and the New Hampshire Department of Transportation (NHDOT), in cooperation with the Federal Highway Administration (FHWA) are proposing the construction of a new interchange with I-93 (known as Exit 4A) and other transportation improvements to reduce congestion and improve safety along State Route 102 (NH 102).

Due to the fact that this is a "Design Build" project this application package includes conceptual plans that encompass the anticipated greatest extent of impacts for the project (an impact envelope approach). As the "Design Build" project moves forward into final design the Department will submit an application update accounting for the anticipated impact reductions in comparison to the overall total permitted impacts.

Using the anticipated greatest extent of impacts the Department has estimated that mitigation could be in the magnitude of approximately \$2.8 Million when estimating for wetland impacts, river impacts, secondary impacts, and vernal pool impacts. As this "Design Build" project progresses into final design impacts will be reduced. We anticipate this mitigation total will come down.

The application references the SDEIS which is available to view in the following location by navigating alphabetically to Derry-Londonderry 13065:  
<https://www.nh.gov/dot/org/projectdevelopment/environment/units/program-management/wetland-applications.htm>

Please note that the SDEIS text has not been revised with the most recent wetland impacts, so impact values won't match the application form and text. The SDEIS is currently being revised to incorporate FHWA's comments and the wetland impact changes.



A payment voucher has been processed for this application (Voucher #13065) in the amount of \$10,000 (Fee Cap).

The lead people to contact for this project are Keith Cota, Project Manager, Bureau of Highway Design (271-2731 or Keith.Cota@dot.nh.gov) or Matt Urban, Chief Operations Management Section, Bureau of Environment (271-3226 or matt.urban@dot.nh.gov)

If and when this application meets with the approval of the Bureau, please send the permit directly to Matt Urban, Chief Operations Management Section, Bureau of Environment.

MRU:mru  
Enclosures  
BOE Original  
Town of Derry (4 copies via certified mail)  
Town of Londonderry (4 copies via certified mail)  
David Trubey, NH Division of Historic Resources  
Carol Henderson, NH Fish & Game (via electronic notification)  
Maria Tur, US Fish & Wildlife (via electronic notification)  
Mark Kern, US Environmental Protection Agency (via electronic notification)  
Michael Hicks, US Army Corp of Engineers (via electronic notification)  
Kevin Nyhan, BOE (via electronic notification)

S:\Environment\PROJECTS\DERRY\13065\Wetlands\WETAPP - Highway.doc





# WETLANDS PERMIT APPLICATION

## Water Division/ Wetlands Bureau Land Resources Management

Check the status of your application: [www.des.nh.gov/onestop](http://www.des.nh.gov/onestop)

RSA/Rule: [RSA 482-A/ Env-Wt 100-900](#)



Administrative Use Only	Administrative Use Only	Administrative Use Only	File No.
			Check No.
			Amount
			Initials

**1. REVIEW TIME:** Indicate your Review Time below. To determine review time, refer to [Guidance Document A](#) for instructions.

☒ Standard Review (Minimum, Minor or Major Impact)

☐ Expedited Review (Minimum Impact only)

**2. MITIGATION REQUIREMENT:**

If mitigation is required a Mitigation-Pre Application meeting must occur prior to submitting this Wetlands Permit Application. To determine if Mitigation is Required, please refer to the [Determine if Mitigation is Required Frequently Asked Question](#).

Mitigation Pre-Application Meeting Date: Month: 06 Day: 20 Year: 2018

☐ N/A - Mitigation is not required

**3. PROJECT LOCATION:**

Separate wetland permit applications must be submitted for each municipality that wetland impacts occur within.

ADDRESS: **Various**

TOWN/CITY:

TAX MAP:

BLOCK:

LOT:

UNIT:

USGS TOPO MAP WATERBODY NAME: **various**

☐ NA

STREAM WATERSHED SIZE: **various**

☐ NA

LOCATION COORDINATES (if known): **71°19'17.952"W 42°53'55.785"N**

☒ Latitude/Longitude ☐ UTM ☐ State Plane

**4. PROJECT DESCRIPTION:**

Provide a brief description of the project outlining the scope of work. Attach additional sheets as needed to provide a detailed explanation of your project. DO NOT reply "See Attached" in the space provided below.

**The Towns of Derry and Londonderry, New Hampshire (the Towns), and the New Hampshire Department of Transportation (NHDOT), in cooperation with the Federal Highway Administration (FHWA) are proposing the construction of a new interchange with I-93 (known as Exit 4A) and other transportation improvements to reduce congestion and improve safety along State Route 102 (NH 102).**

**5. SHORELINE FRONTAGE:**

☒ NA This does not have shoreline frontage.

SHORELINE FRONTAGE:

Shoreline frontage is calculated by determining the average of the distances of the actual natural navigable shoreline frontage and a straight line drawn between the property lines, both of which are measured at the normal high water line.

**6. RELATED NHDES LAND RESOURCES MANAGEMENT PERMIT APPLICATIONS ASSOCIATED WITH THIS PROJECT:**

Please indicate if any of the following permit applications are required and, if required, the status of the application.

To determine if other Land Resources Management Permits are required, refer to the [Land Resources Management Web Page](#).

Permit Type	Permit Required	File Number	Permit Application Status
Alteration of Terrain Permit Per RSA 485-A:17	<input type="checkbox"/> YES <input type="checkbox"/> NO	_____	<input type="checkbox"/> APPROVED <input type="checkbox"/> PENDING <input type="checkbox"/> DENIED
Individual Sewerage Disposal per RSA 485-A:2	<input type="checkbox"/> YES <input type="checkbox"/> NO	_____	<input type="checkbox"/> APPROVED <input type="checkbox"/> PENDING <input type="checkbox"/> DENIED
Subdivision Approval Per RSA 485-A	<input type="checkbox"/> YES <input type="checkbox"/> NO	_____	<input type="checkbox"/> APPROVED <input type="checkbox"/> PENDING <input type="checkbox"/> DENIED
Shoreland Permit Per RSA 483-B	<input type="checkbox"/> YES <input type="checkbox"/> NO	_____	<input type="checkbox"/> APPROVED <input type="checkbox"/> PENDING <input type="checkbox"/> DENIED

**7. NATURAL HERITAGE BUREAU & DESIGNATED RIVERS:**

See the Instructions & Required Attachments document for instructions to complete a & b below.

a. Natural Heritage Bureau File ID: NHB 18 - 2355

b. ☐ [Designated River](#) the project is in  $\frac{1}{4}$  miles of \_\_\_\_\_; and  
date a copy of the application was sent to the [Local River Management Advisory Committee](#): Month: \_\_\_\_ Day: \_\_\_\_ Year: \_\_\_\_

☒ N/A

[lrn@des.nh.gov](mailto:lrn@des.nh.gov) or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

[www.des.nh.gov](http://www.des.nh.gov)


<b>8. APPLICANT INFORMATION (Desired permit holder)</b>			
LAST NAME, FIRST NAME, M.I.: <b>Cota, Keith</b>			
TRUST / COMPANY NAME: <b>NHDOT</b>		MAILING ADDRESS: <b>7 Hazen Drive</b>	
TOWN/CITY: <b>Concord</b>		STATE: <b>NH</b>	ZIP CODE: <b>03302</b>
EMAIL or FAX: <b>Keith.Cota@dot.nh.gov</b>		PHONE: <b>(603) 271-1615</b>	
ELECTRONIC COMMUNICATION: By initialing here: <u>KTC</u> , I hereby authorize NHDES to communicate all matters relative to this application electronically.			
<b>9. PROPERTY OWNER INFORMATION (If different than applicant)</b>			
LAST NAME, FIRST NAME, M.I.:			
TRUST / COMPANY NAME:		MAILING ADDRESS:	
TOWN/CITY:		STATE:	ZIP CODE:
EMAIL or FAX:		PHONE:	
ELECTRONIC COMMUNICATION: By initialing here _____, I hereby authorize NHDES to communicate all matters relative to this application electronically.			
<b>10. AUTHORIZED AGENT INFORMATION</b>			
LAST NAME, FIRST NAME, M.I.: <b>Carbonneau, Lee</b>		COMPANY NAME: <b>Normandeau Associates</b>	
MAILING ADDRESS: <b>25 Nashua Road</b>			
TOWN/CITY: <b>Bedford</b>		STATE: <b>NH</b>	ZIP CODE: <b>03110</b>
EMAIL or FAX: <b>lcarbonneau@normandeau.com</b>		PHONE: <b>(603) 637-1150</b>	
ELECTRONIC COMMUNICATION: By initialing here <u>LEC</u> , I hereby authorize NHDES to communicate all matters relative to this application electronically.			
<b>11. PROPERTY OWNER SIGNATURE:</b>			
See the Instructions & Required Attachments document for clarification of the below statements			
By signing the application, I am certifying that:			
<ol style="list-style-type: none"> <li>1. I authorize the applicant and/or agent indicated on this form to act in my behalf in the processing of this application, and to furnish upon request, supplemental information in support of this permit application.</li> <li>2. I have reviewed and submitted information &amp; attachments outlined in the Instructions and Required Attachment document.</li> <li>3. All abutters have been identified in accordance with RSA 482-A:3, I and Env-Wt 100-900.</li> <li>4. I have read and provided the required information outlined in Env-Wt 302.04 for the applicable project type.</li> <li>5. I have read and understand Env-Wt 302.03 and have chosen the least impacting alternative.</li> <li>6. Any structure that I am proposing to repair/replace was either previously permitted by the Wetlands Bureau or would be considered grandfathered per Env-Wt 101.47.</li> <li>7. I have submitted a Request for Project Review (RPR) Form (<a href="http://www.nh.gov/nhdhr/review">www.nh.gov/nhdhr/review</a>) to the NH State Historic Preservation Officer (SHPO) at the NH Division of Historical Resources to identify the presence of historical/ archeological resources while coordinating with the lead federal agency for NHPA 106 compliance.</li> <li>8. I authorize NHDES and the municipal conservation commission to inspect the site of the proposed project.</li> <li>9. I have reviewed the information being submitted and that to the best of my knowledge the information is true and accurate.</li> <li>10. I understand that the willful submission of falsified or misrepresented information to the New Hampshire Department of Environmental Services is a criminal act, which may result in legal action.</li> <li>11. I am aware that the work I am proposing may require additional state, local or federal permits which I am responsible for obtaining.</li> <li>12. The mailing addresses I have provided are up to date and appropriate for receipt of NHDES correspondence. NHDES will not forward returned mail.</li> </ol>			
 Property Owner Signature		<b>KEITH A. COTA</b> Print name legibly	<b>10/11/18</b> Date



**MUNICIPAL SIGNATURES****12. CONSERVATION COMMISSION SIGNATURE**

The signature below certifies that the municipal conservation commission has reviewed this application, and:

1. Waives its right to intervene per RSA 482-A:11;
2. Believes that the application and submitted plans accurately represent the proposed project; and
3. Has no objection to permitting the proposed work.


	Print name legibly	Date
----------------------------------------------------------------------------------	--------------------	------

**DIRECTIONS FOR CONSERVATION COMMISSION**

1. Expedited review ONLY requires that the conservation commission's signature is obtained in the space above.
2. Expedited review requires the Conservation Commission signature be obtained **prior** to the submittal of the original application to the Town/City Clerk for signature.
3. The Conservation Commission may refuse to sign. If the Conservation Commission does not sign this statement for any reason, the application is not eligible for expedited review and the application will be reviewed in the standard review time frame.

**13. TOWN / CITY CLERK SIGNATURE**

As required by Chapter 482-A:3 (amended 2014), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.

			
Town/City Clerk Signature	Print name legibly	Town/City	Date

**DIRECTIONS FOR TOWN/CITY CLERK:**

Per RSA 482-A:3,I

1. For applications where "Expedited Review" is checked on page 1, if the Conservation Commission signature is not present, NHDES will accept the permit application, but it will NOT receive the expedited review time.
2. IMMEDIATELY sign the original application form and four copies in the signature space provided above;
3. Return the signed original application form and attachments to the applicant so that the applicant may submit the application form and attachments to NHDES by mail or hand delivery.
4. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board; and
5. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

**DIRECTIONS FOR APPLICANT:**

1. Submit the single, original permit application form bearing the signature of the Town/ City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery.

[lrn@des.nh.gov](mailto:lrn@des.nh.gov) or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

[www.des.nh.gov](http://www.des.nh.gov)



**14. IMPACT AREA:**

For each jurisdictional area that will be/has been impacted, provide square feet and, if applicable, linear feet of impact

Permanent: impacts that will remain after the project is complete.Temporary: impacts not intended to remain (and will be restored to pre-construction conditions) after the project is complete.

JURISDICTIONAL AREA	PERMANENT Sq. Ft. / Lin. Ft.		TEMPORARY Sq. Ft. / Lin. Ft.	
Forested wetland	129,720	<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Scrub-shrub wetland	3,980	<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Emergent wetland	2,463	<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Wet meadow		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Intermittent stream	2,619 / 666	<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Perennial Stream / River	24,204 / 1,615	<input type="checkbox"/> ATF	/	<input type="checkbox"/> ATF
Lake / Pond	/	<input type="checkbox"/> ATF	/	<input type="checkbox"/> ATF
Bank - Intermittent stream	/	<input type="checkbox"/> ATF	/	<input type="checkbox"/> ATF
Bank - Perennial stream / River	879 / 351	<input type="checkbox"/> ATF	/	<input type="checkbox"/> ATF
Bank - Lake / Pond	/	<input type="checkbox"/> ATF	/	<input type="checkbox"/> ATF
Tidal water	/	<input type="checkbox"/> ATF	/	<input type="checkbox"/> ATF
Salt marsh		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Sand dune		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Prime wetland	2,870	<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Prime wetland buffer		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Undeveloped Tidal Buffer Zone (TBZ)		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Previously-developed upland in TBZ		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Docking - Lake / Pond		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Docking - River		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Docking - Tidal Water		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Vernal Pool	50,127	<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
<b>TOTAL</b>	<b>216,962 / 2,632</b>		<b>/</b>	

**15. APPLICATION FEE:** See the Instructions & Required Attachments document for further instruction☐ Minimum Impact Fee: Flat fee of \$ 200☒ Minor or Major Impact Fee: Calculate using the below table belowPermanent and Temporary (non-docking) 216,962 sq. ft. X \$0.20 = \$ 43,392.40

Temporary (seasonal) docking structure: \_\_\_\_\_ sq. ft. X \$1.00 = \$ \_\_\_\_\_

Permanent docking structure: \_\_\_\_\_ sq. ft. X \$2.00 = \$ \_\_\_\_\_

Projects proposing shoreline structures (including docks) add \$200 = \$ \_\_\_\_\_

Total = \$ \_\_\_\_\_

The Application Fee is the above calculated Total or \$200, whichever is greater = \$ 10,000 (DOT)[lrn@des.nh.gov](mailto:lrn@des.nh.gov) or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

[www.des.nh.gov](http://www.des.nh.gov)



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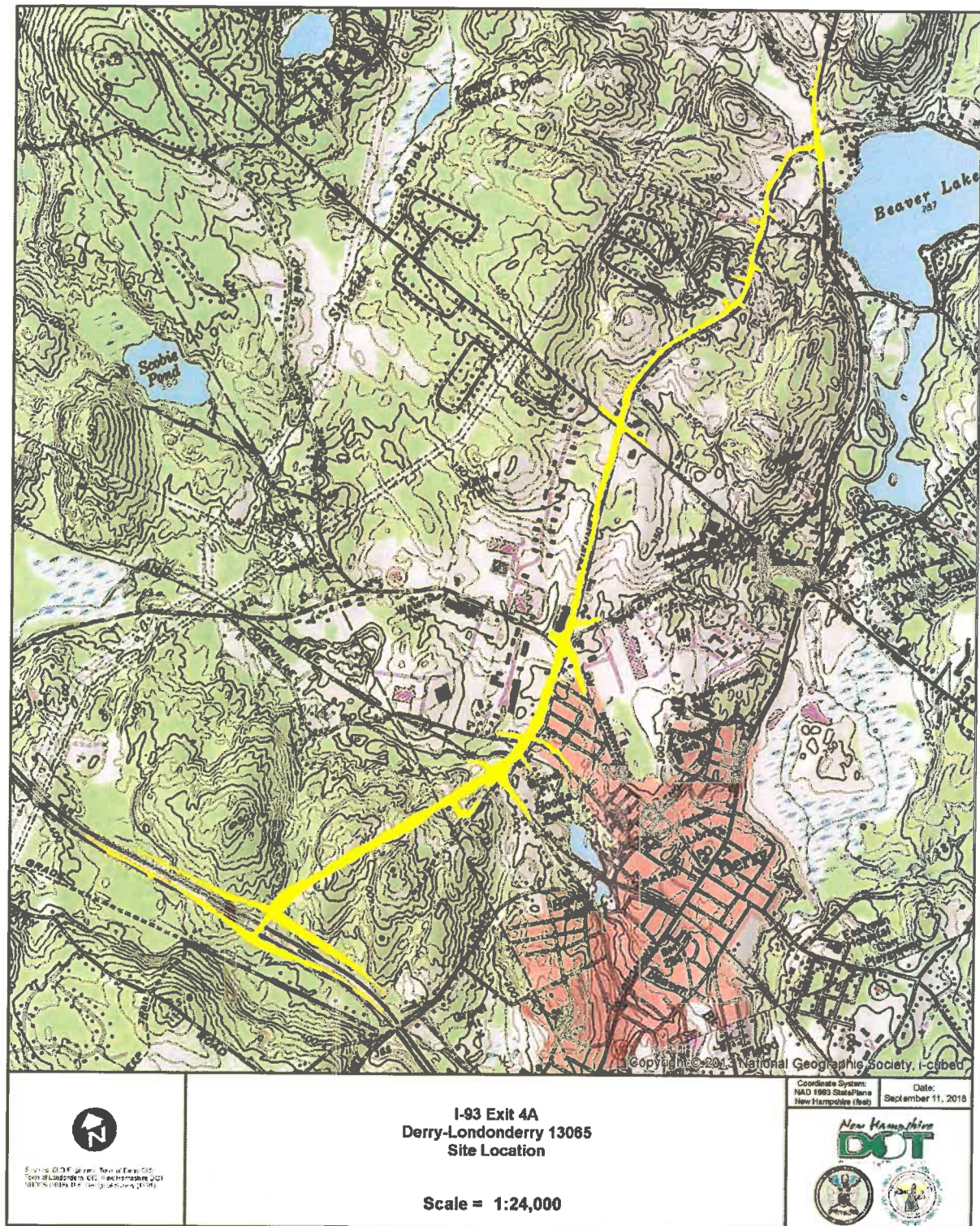
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## **Standard Dredge and Fill Application Form**

[replace in pdf]

## Exhibit A - Location Map





## Attachment A

**Env-Wt 302.04 Requirements for Application Evaluation - For any major or minor project, the applicant shall demonstrate by plan and example that the following factors have been considered in the project's design in assessing the impact of the proposed project to areas and environments under the department's jurisdiction.**  
**Respond with statements demonstrating:**

**1. The need for the proposed impact.**

The Towns of Derry and Londonderry, working with the Federal Highway Administration (FHWA) and the New Hampshire Department of Transportation (NHDOT) identified several factors demonstrating the need for transportation improvements within the study area, including traffic congestion in downtown Derry, economic vitality, and safety.

Please see Section "2.0 Purpose and Need" in the I-93 Exit 4A Supplemental Draft Environmental Impact Statement (SDEIS) for additional detail.

**2. That the alternative proposed by the applicant is the one with the least impact to wetlands or surface waters on site.**

Alternatives A & B were the two build alternatives that met the Purpose and Need. One of the key reasons why Alternative A was selected versus Alternative B was related to their combined wetland and stream impacts. Alternative A would impact 4.34 acres of wetland, which includes 1.15 acres of direct vernal pool impacts and will have 2,281 linear feet of stream channel and bank impacts, while Alternative B would impact 10 acres of wetlands including 1.09 acres of direct vernal pool impacts, and impact 1,342 linear feet of streams. Alternative B would have more stream impacts from new crossings on new alignment. Please see "4.12.2 Wetlands and Vernal Pools - Environmental Consequences and 4.14.2 Aquatic Life and Essential Fish Habitat – Environmental Consequences" in the SDEIS for additional detail.

**3. The type and classification of the wetlands involved.**

The majority of wetland impacts would occur in forested wetlands (4.12 of 4.34 acres). For additional detail please see "4.12.2 Wetlands and Vernal Pools Environmental Consequences" and "Table 4.12-3 Impact Totals by Purpose and Wetland Classification" in the SDEIS.

**4. The relationship of the proposed wetlands to be impacted relative to nearby wetlands and surface waters.**

Wetlands proposed to be impacted are all in the Beaver Brook watershed. Please see "4.11 Surface Waters and Water Quality" and "4.12 Wetlands and Vernal Pools" for additional detail.

**5. The rarity of the wetland, surface water, sand dunes, or tidal buffer zone area.**

Wetlands proposed to be impacted are generally typical of wetlands in this part of New Hampshire, with forested wetlands (PFO1E) making up the bulk of wetland impacts. There are 1.15 acres of

vernal pools proposed to be impacted (included in the total), which provide habitat for vernal pool dwelling wildlife species. Please see “4.11 Surface Waters and Water Quality” and “4.12 Wetlands and Vernal Pools” in the SDEIS for additional detail.

**6. The surface area of the wetlands that will be impacted.**

The proposed project would result in an estimated 4.34 acres of wetland impact, including direct impacts to eight documented vernal pools. Please see “Wetlands and Vernal Pools 4.12.2 Environmental Consequences” in the SDEIS for additional detail.

**7. The impact on plants, fish and wildlife including, but not limited to:**

- a. Rare, special concern species;**
- b. State and federally listed threatened and endangered species;**
- c. Species at the extremities of their ranges;**
- d. Migratory fish and wildlife;**
- e. Exemplary natural communities identified by the DRED-NHB; and**
- f. Vernal pools.**

a. Based on records held by NHNHB, two species of Special Concern, banded sunfish and redbfin pickerel, have been found in Shields Brook, but not in the vicinity of the project crossing. Shields Brook will require a culvert extension, but stream connectivity will be maintained. See “4.14.1 Aquatic Life and Essential Fish Habitat - Affected Environment”. There are 23 Species of Greatest Conservation Need that could occur within the study area, based on their known habitat preferences and distribution within the state, but their locations are not tracked by NHNHB. See “Table 4.17-3. Species of Greatest Conservation Need that may be Present within the Project Area” in the SDEIS.

b. An inquiry with the New Hampshire Natural Heritage Bureau indicated that there are recent records of state-threatened black racers in the vicinity of the project area. Proposed mitigation for potential impacts to black racers is discussed in “4.17.2 Threatened and Endangered Species – Environmental Consequences – Mitigation.” No nearby records for any listed turtle species were found in the vicinity of the proposed project. No listed plants have been recorded or observed within the footprint of Alternative A, but the greatest opportunity for any undocumented populations of rare plants to be affected by the proposed Project is along portions of the Project that cross or are aligned with transmission line ROW. See “4.17.2 Threatened and Endangered Species - Environmental Consequences” in the SDEIS for more details.

The only federally listed species potentially present within the Project area is the federally listed as threatened northern long-eared bat (NLEB; *Myotis septentrionalis*). This species is also state-listed as threatened. This tree-roosting bat uses forested habitats during its active season from April 15 – October 31. The Project has the potential to affect this species via tree clearing, which could reduce roosting habitat or cause direct mortality if an occupied roost tree is felled when bats are present. Therefore, a survey compliant with USFWS’ 2016 Range-wide Indiana Bat Summer Survey Guidelines (Guidelines) (USFWS, 2016), which are also applicable to summer survey for NLEB, was conducted, and this species was determined not to be present. Appendix M of the SDEIS contains a full



description of the survey and results.

c. Species at the extremity of their ranges are generally included in lists of Species of Special Concern or Species of Greatest Conservation Need. See "a." above.

d. The Project area is characterized by substantial development, but there is one large block of forest that will be fragmented by the Project. This could have an impact on several migratory forest-nesting birds (e.g., wood thrush, scarlet tanager, red-eyed vireo, and broad-winged hawk) that are sensitive to the fragmentation and edge effects that the road would create. Habitat suitability for them in the remaining forest area would be reduced. Stream connectivity will be maintained and no impacts to the catadromous American eel is expected. See "4.16.2 Plant Communities and Wildlife – Environmental Consequences" and "4.14.1 Aquatic Life and Essential Fish Habitat - Affected Environment" in the SDEIS for additional details.

e. No exemplary natural communities will be directly affected by the proposed Project.

f. The Project would impact a total 4.34 acres of wetlands, including 1.15 acres of vernal pool habitat. A total of eight vernal pools would be directly impacted by the project. Please see "4.12.2 Wetlands and Vernal Pools – Environmental Consequences - Vernal Pool Impacts" in the SDEIS for additional detail.

#### **8. The impact of the proposed project on public commerce, navigation and recreation.**

In Derry, current constraints related to through traffic are a concern to the accessibility of businesses downtown. In Londonderry, a large tract of undeveloped land on the east side of I-93 currently has poor highway access and is the subject of the Town's Woodmont Commons Planned Unit Development (PUD) Master Plan to attract regionally significant business opportunities.

Under the proposed Project, approximately 41.45 acres of new ROW would be required, and these takes would include 14 residential acquisitions and 25 business displacements. In addition to compensation for property acquisition, relocation assistance would be provided to residential, non-profit, and business owners displaced by the Project in conformance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. See "4.7.2 Socioeconomics - Environmental Consequences – Mitigation" in the SDEIS for additional details. Implementation of the proposed project would provide direct Interstate access to commercial and industrial lands and be compatible with existing and future commercial and industrial uses. Please see "2.2.2 Economic Vitality" and "4.3.2 Land Use, Zoning, and Public Policy – Environmental Consequences" for additional detail.

No navigable waters are crossed by the Project.

There will be a very minor impact to Ryder Field which will not interfere with the recreational use of the property. See "7.4 Potential for Use and Impacts on Section 4(f) Resources" in the SDEIS for additional details.

#### **9. The extent to which a project interferes with the aesthetic interests of the general public. For example, where an applicant proposes the construction of a retaining wall on the bank of a lake, the applicant shall be required to indicate the type of material to be used and the**

<p><b>effect of the construction of the wall on the view of other users of the lake.</b></p>
<p>The majority of the proposed Project corridor includes existing roads located in highly developed residential and commercial/industrial areas. Therefore, in most areas of the proposed project corridor, the existing traffic volumes, along with the type of development and its density, make for an environment that is not particularly sensitive from a visual perspective.</p> <p>Between I-93 and Franklin Street Extension, the proposed project corridor would be constructed in an undeveloped area of land. From a visual perspective, the area represents a visually pleasing landscape of woodlands and wetlands. However, there is also abundant evidence of past and ongoing illegal dumping activities, as well as all-terrain vehicle usage, which detracts from the overall visual experience.</p> <p>Please see "4.6.2 Visual Resources – Environmental Consequences" in the SDEIS for additional detail on aesthetic impacts of the proposed project.</p>
<p><b>10. The extent to which a project interferes with or obstructs public rights of passage or access. For example, where the applicant proposes to construct a dock in a narrow channel, the applicant shall be required to document the extent to which the dock would block or interfere with the passage through this area.</b></p>
<p>Under the proposed project, there would be a reduction in trips on east-west roadways including NH 102 and NH 28. The creation of a new parallel route to NH 102 would create a shift in traffic patterns through downtown Derry. The Project will not impact public access to, or passage along, public waters. Please see "4.2.2 Traffic and Transportation – Environmental Consequences" in the SDEIS for additional detail.</p>
<p><b>11. The impact upon abutting owners pursuant to RSA 482-A:11, II. For example, if an applicant is proposing to rip-rap a stream, the applicant shall be required to document the effect of such work on upstream and downstream abutting properties.</b></p>
<p>Design details including scour stone and riprap have not yet been designed, but will be included in final design plans. Impacts to abutting property owners will be avoided and minimized during construction through the use of appropriate construction BMPs.</p>
<p><b>12. The benefit of a project to the health, safety, and well being of the general public.</b></p>
<p>Part of the purpose of the Project is to improve the safe and efficient movement of people, goods, and services between I-93 and the towns served by NH 102, specifically Derry and Londonderry, that are immediately adjacent to I-93 Exit 4; and providing an alternative route to the Interstate system for traffic using NH 102 to and from the east, thus removing a large volume of through traffic from the heavily congested downtown Derry street network. Reducing traffic congestion on the Derry street network will improve safety by allowing more opportunities for vehicles to find gaps in traffic to make safer traffic turning movements into and across traffic. Reduced traffic will also make it safer for bicyclists and pedestrians to travel. Contiguous sidewalks are being provided throughout the project to improve safety and four to five foot wide shoulders are being provided for bicyclists.</p>



In addition, the profile (vertical alignment) of Tsienneto Road east of Scenic Drive is proposed to be revised to provide a less abrupt curvature to make it meet minimum AASHTO stopping sight distance standards. Also the intersection sight distance from Scenic Drive is proposed to be improved to meet the posted speed standard.

**13. The impact of a proposed project on quantity or quality of surface and ground water. For example, where an applicant proposes to fill wetlands the applicant shall be required to document the impact of the proposed fill on the amount of drainage entering the site versus the amount of drainage exiting the site and the difference in the quality of water entering and exiting the site.**

The proposed project includes development of new roadway in undeveloped areas or areas with non-roadway current land use as well as redevelopment of existing roadway that would result in new impervious surface within Upper Beaver Brook watershed. The addition of new impervious roadway surfaces that contribute stormwater runoff to surface waters has the potential to add new TSS and nutrient loads to the watershed. Please see "4.11.2 Surface Waters and Water Quality – Environmental Consequences" in the SDEIS for additional detail.

The proposed project footprint overlaps seven wellhead protection areas. However, several of these public wells are located near each other and therefore share largely overlapping WHPAs that occupy much of the same land area. Please see "4.13.2 Groundwater – Environmental Consequences" in the SDEIS for additional detail.

**14. The potential of a proposed project to cause or increase flooding, erosion, or sedimentation.**

The primary area of impact for the proposed project would be on the floodplain for Shields Brook. The proposed project would cross the Shields Brook floodplain near the existing Folsom Road/Madden Road crossing. Detailed hydraulic analyses will be completed during final design to avoid and/or minimize impacts on the floodway, and in particular to avoid raising the base flood elevation. Please see "4.15.2 Floodplains – Environmental Consequences" in the SDEIS for additional detail.

**15. The extent to which a project that is located in surface waters reflects or redirects current or wave energy which might cause damage or hazards.**

Several surface waters in the project area may be affected by the construction and maintenance of the proposed roadway. However, none are tidal and current/wave energy is not anticipated to be impacted by any alternative. Please see "4.11 Surface Waters and Water Quality" for additional detail.

**16. The cumulative impact that would result if all parties owning or abutting a portion of the affected wetland or wetland complex were also permitted alterations to the wetland proportional to the extent of their property rights. For example, an applicant who owns only a portion of a wetland shall document the applicant's percentage of ownership of that wetland and the percentage of that ownership that would be impacted.**

Cumulative effects (including direct impacts of the proposed project, indirect impacts attributable to the project, and actions by others) are documented in detail in Chapter 5 of the SDEIS. Given the uncertainty associated with forecasting future land use changes, potential cumulative impacts to streams, wetlands and vernal pools are expressed as a range (minimum and maximum impacts). The Land Use Scenarios Technical Report provides the basis for the land development assumptions and this report was provided for review to all the participating and cooperating agencies during the SDEIS process.
<b>17. The impact of the proposed project on the values and functions of the total wetland or wetland complex.</b>
Functions and values of each affected wetland were evaluated and are summarized in Table 1 of Appendix J of the SDEIS, and the impacts to wetlands are discussed in "4.12.2 Wetlands and Vernal Pools – Environmental Consequences" in the SDEIS.
<b>18. The impact upon the value of the sites included in the latest published edition of the National Register of Natural Landmarks, or sites eligible for such publication.</b>
Not applicable. No listed sites from the National Register of Natural Landmarks occur within Rockingham County, NH.
<b>19. The impact upon the value of areas named in acts of congress or presidential proclamations as national rivers, national wilderness areas, national lakeshores, and such areas as may be established under federal, state, or municipal laws for similar and related purposes such as estuarine and marine sanctuaries.</b>
No national rivers, wilderness areas, national lakeshores or such areas are within or adjacent to the study area.
<b>20. The degree to which a project redirects water from one watershed to another.</b>
All drainage from the project is currently within and will remain within the Upper Beaver Brook watershed (Level 12 Hydrologic Unit 010700061025).
<b>Additional Comments</b>
None

## Prime Wetlands

The project currently proposes to impact 2,870 square feet of Prime Wetland B-12, north of Tsienneto Road and west of the intersection with NH 102. The impacts will be related to the replacement of two side by side culverts under Tsienneto Road. Under current conditions, the culverts are undersized and result in frequent flooding of the adjacent properties. A stream crossing with a weir is proposed to maintain water elevations in the prime wetland while allowing additional flow capacity under Tsienneto Road.



In accordance with Env-Wt 703, Prime Wetlands Permit Process, the following will be demonstrated in a subsequent submission to NHDES:

- (1) There will be no significant net loss of values set forth in RSA 482-A:1;
- (2) The project is consistent with the purpose specified in RSA 482-A:1;
- (3) The project could not be relocated to avoid impacts on prime wetlands without either reducing the public value of the project, or negatively affecting the public health or safety;
- (4) The project's impacts on prime wetlands are the minimum practical without either reducing the public value of the project, or negatively affecting the public health or safety; and
- (5) The project incorporates appropriate and practicable compensatory mitigation for each of the wetland functions and values of RSA 482-A:1, and each of the functions and values ranked by the municipality, that are impacted by the project. The mitigation proposed shall be appropriate in terms of matching the proposed benefit given the relative harm of the project. The mitigation shall be practicable given the technology available at the time of this application.

## **Exhibit B - NHDOT Bureau of Environment Conference Reports**

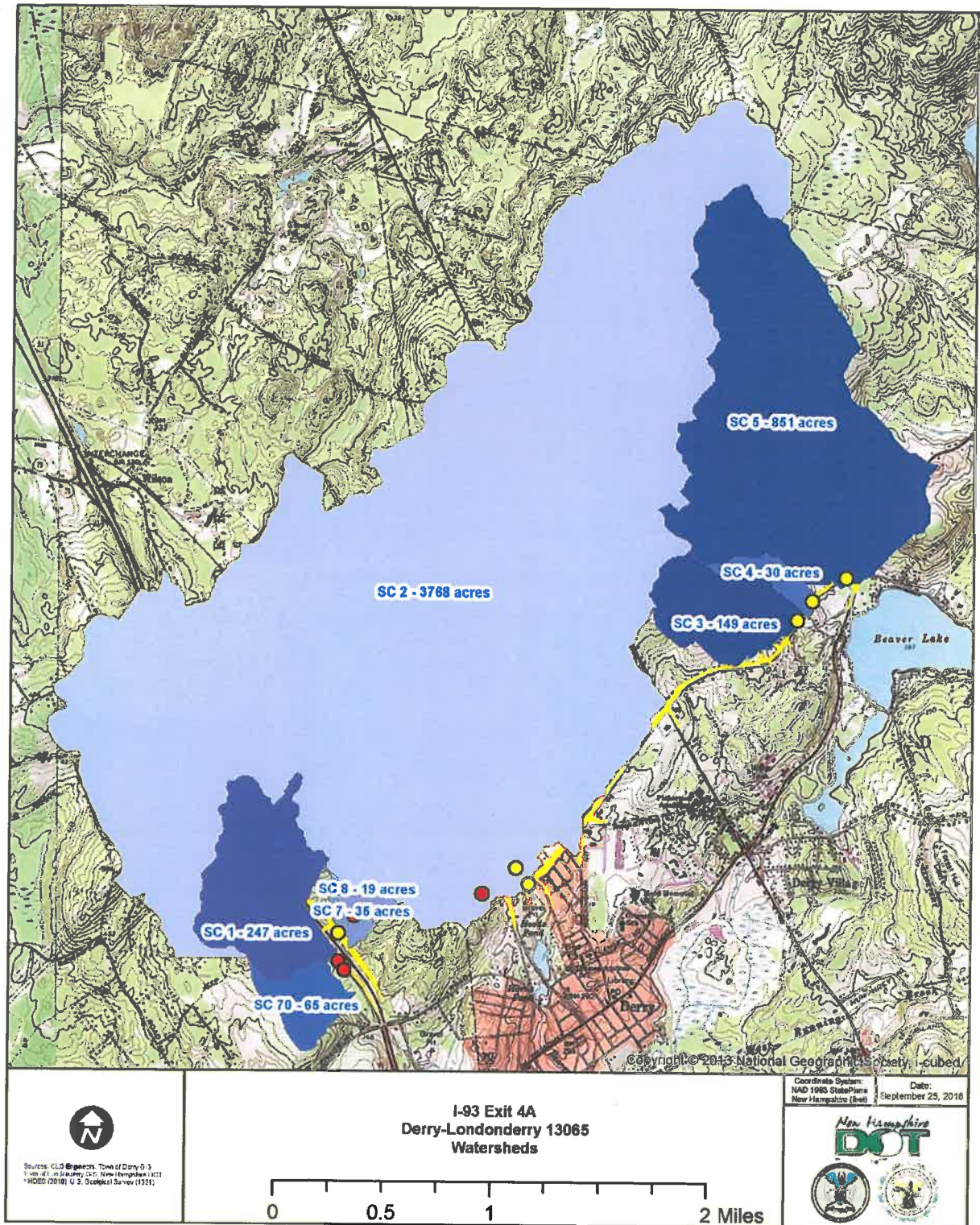
The project was reviewed on the following dates:

5/28/1997	3/17/1999	6/16/1999	10/20/1999	11/17/1999	8/16/1999	9/20/2000
7/18/2001	8/17/2005	3/15/2006	5/16/2007	1/20/2016	2/17/2016	10/19/2016
4/18/2018	6/20/2018					

Minutes can be found at the link below under Derry-Londonderry 13065:

<https://www.nh.gov/dot/org/projectdevelopment/environment/units/project-management/nracrmeetings.htm>

## Exhibit C - Watershed Boundaries





## Env-Wt 900 Stream Crossing Requirements

As currently proposed, the project will incur impacts at 9 stream locations. Stream crossings and stream impacts are described in Section 4.14.2, "Aquatic Life and Essential Fish Habitat, Environmental Consequences" in the SDEIS. Stream crossings are summarized in Table 8. Hydraulic analyses are underway for all stream crossings in the project area and Env-Wt 900 et. seq. will be addressed in detail in a subsequent submission to the NHDES.

**Table 1 Exit 4A Stream Impact Summary**

Crossing	Flow Regime <sup>a</sup>	Tier	Watershed Size (Acres) <sup>b</sup>	Existing Crossing	Location	Activity Description	Linear Feet of Stream/Bank Impact
1	Per.	2	269	No crossing	New access ramp W of I-93 at southern Exit 4A interchange -71°20'56" 42°53'4"	Relocate perennial stream channel. Portions of channel already impacted from I-93 construction.	1,095
2	Per. Shields Brook	3	3,767	72" CMP	N. High St - between Ferland Drive and Franklin St -71°19'54 42°53'23"	Extend existing culvert crossing to the north to accommodate connector road.	447
3	Int.	1	148	15" HDPE	Tsienneto Road - Approx. 200 ft west of Scenic Drive -71°18'26" 42°54'27"	Extend culvert to accommodate road widening.	38
4	Int.	1	30	15" unknown material culvert	Tsienneto Road - between Scenic Drive and Jeff Lane -71°18'21" 42°54'31"	Extend culvert to accommodate road widening.	35
5	Per. Un-named	3	850	30" and 36" CMPs	Tsienneto Road - 250 ft west of NH 102 -71°18'10 42°54'37"	Extend culvert to accommodate road widening.	73
7	Int.	1	35	24" RCP (existing is two pipes, one under SB and another under NB)	New access ramp - E of I-93 at southern interchange -71°20'56 42°53'11"	Extend culvert under new I-93 northbound off-ramp and southbound on-ramp.	177

Crossing	Flow Regime <sup>a</sup>	Tier	Watershed Size (Acres) <sup>b</sup>	Existing Crossing	Location	Activity Description	Linear Feet of Stream/Bank Impact
8	Int.	1	19	None	New alignment - 500 ft E of I-93 71°20'51" 42°53'15"	Construct new stream crossing/relocate stream for connector road.	291
11	Eph. <sup>a</sup>	1	Un-determined <sup>d</sup>	None	New alignment - 300 ft N of Madden Drive -71°20'9" 42°53'21"	Stream relocation/impact.	77
70	Int.	1	65	None	New access ramp W of I-93 at southern Exit 4A interchange -71°20'56" 42°53'4"	Stream relocation/impact.	48

<sup>a</sup> Flow regime based on observation and watershed size. In the absence of long term monitoring for streams in the project area, streams with watersheds smaller than 200 acres were assumed to be intermittent, and larger than 200 acres were assumed to be perennial. Ephemeral streams had no measurable watershed and had physical characteristics meeting the NHDES definition of ephemeral streams.

<sup>b</sup> Watershed sizes based on Streamstats basin delineation: <https://streamstats.usgs.gov/ss/>.

<sup>c</sup> Linear disturbance estimates based on preliminary design information.

<sup>d</sup> Unable to determine watershed size using Streamstats.

<sup>e</sup> The upstream portion of Crossing #5 is mapped as prime wetland which will be affected by the improvements to Tsienneto Road.

## Mitigation

Mitigation plans have not been finalized at this conceptual design stage. NHDOT is committing to working with the Towns of Londonderry and Derry to evaluate local stream crossing locations that would qualify for improvement funding as part of the Stream Passage Improvement Program (SPIP) agreement with NHDES to upgrade culverts within the Beaver Brook watershed.

Other than culvert improvements to be made through the SPIP, mitigation will primarily be a payment to the Aquatic Resource Mitigation (ARM) fund. Proposed mitigation for previous iterations of the Exit 4A project had incorporated elements of stream restoration, vernal pool creation, and land preservation. The total in-lieu fee recommended for this project is estimated at **\$2,819,054.83** as summarized in Table 2.

**Table 2. Exit 4A Proposed In-Lieu Fee Summary**

Resource	In Lieu Fee Estimate	Assumptions
Wetlands (including riverbanks)	\$953,774.91	Includes vernal pools as forested wetlands in accordance with 2016 USACE Mitigation Guidance.
Secondary Impacts "Edge Effects"	\$395,765.44	Mitigation for secondary "Edge Effects" are calculated as recommended in the 2016 USACE Mitigation Guidance.
Vernal Pools	\$835,701.36	Vernal pool additional mitigation based on ratios recommended in 2016 USACE Mitigation Guidance, based on quality of vernal pools.
Streams	\$633,813.12	Calculated for impacts to channels and banks using the 2018 In-Lieu Fee Calculator.
<b>TOTAL</b>	<b>\$2,819,054.83</b>	



### Proposed Wetland Mitigation

Wetland impacts for the Exit 4A Project as currently proposed are listed in Table 3.

**Table 3 Proposed Wetland Impacts**

<b>Cowardin</b>	<b>Acreage</b>
PFO (forested)	2.98
PSS (scrub-shrub)	0.09
PEM (emergent)	0.12
Vernal Pools	1.15
Total	4.34

### In-Lieu fee Estimated Payment for Wetland Impacts

Using the 2018 In-Lieu Fee Calculator, the in-lieu fee for wetland impacts, not counting square footage of streams but counting vernal pools as forested wetlands, is estimated at **\$953,774.91**.

Table 4 In-Lieu Fee Calculation for Direct Wetland Impact

<b>NHDES AQUATIC RESOURCE MITIGATION FUND</b> <b>WETLAND PAYMENT CALCULATION</b> <b>***INSERT AMOUNTS IN YELLOW CELLS***</b>			
<b>1</b>	<b>Convert square feet of impact to acres:</b>		
<b>INSERT SQ FT OF IMPACT</b>	Square feet of impact =		189,183
			43560.00
	Acres of impact =		4.3430
<b>2</b>	<b>Determine acreage of wetland construction:</b>		
	Forested wetlands:		6.5146
	Tidal wetlands:		13.0291
	All other areas:		6.5146
<b>3</b>	<b>Wetland construction cost:</b>		
	Forested wetlands:		\$581,167.09
	Tidal Wetlands:		\$1,162,334.19
	All other areas:		\$581,167.09
<b>4</b>	<b>Land acquisition cost (See land value table):</b>		
<b>INSERT LAND VALUE FROM TABLE WHICH APPEARS TO THE LEFT. (Insert the amount do not copy and paste.)</b>	Town land value:		32,795
	Forested wetlands:		\$213,645.33
	Tidal wetlands:		\$427,290.66
	All other areas:		\$213,645.33
<b>5</b>	<b>Construction + land costs:</b>		
	Forested wetland:		\$794,812.43
	Tidal wetlands:		\$1,589,624.85
	All other areas:		\$794,812.43
<b>6</b>	<b>NHDES Administrative cost:</b>		
	Forested wetlands:		\$158,962.49
	Tidal wetlands:		\$317,924.97
	All other areas:		\$158,962.49
<b>***** TOTAL ARM PAYMENT*****</b>			
	Forested wetlands:		\$953,774.91
	Tidal wetlands:		\$1,907,549.82
	All other areas:		\$953,774.91

## Secondary Impacts (Edge Effects)

The US Army Corps of Engineers 2016 Mitigation guidance also provides ratios for temporary fill, permanent conversion (forested to emergent) and secondary impact edge effects. The guidelines recommend that a portion of the standard amount of mitigation that would be required if a wetland were directly impacted should be added to the total if the project is within the "Impact Zone" of the project. The size of the Impact Zone varies by wetland type, and Impact Zones are broken into two types, depending on proximity to the project, with "High Level Impact Zone" being the closer portion, and requiring more mitigation than the rest of the impact zone.

Temporary fill and permanent conversion of wetland type are unlikely to be significant in this project. Secondary Impact Edge Effects are tabulated in Table 5. Secondary Impact Edge Effects were tabulated for areas of new alignment, road widening, and around proposed stormwater treatment areas.

**Table 5. USACE Recommended Secondary Impact Edge Effects  
(from Table C2, Page 58 in 2016 USACE Guidance)**

Wetland Type	Impact Zone <sup>a</sup>	Acreage in Impact Zone (30% Design)	% of Standard Amount	Acreage to be mitigated
Palustrine Emergent	25	0.14	25%	0.04
	75	0.23	10%	0.02
Scrub Shrub	50	0.16	25%	0.04
	100	0.69	10%	0.07
Forested	50	3.48	25%	0.87
	150	9.31	10%	0.93
			<b>Total</b>	<b>1.80<sup>b</sup></b>

Notes – a USACE identifies "High level impact zones" and "remainder of impact zone" for emergent, scrub shrub, and forested wetlands. The amount of mitigation required is a percentage of what would be required for direct impacts.

b Secondary impact edge effects have been refined since the June 20, 2018 Natural Resource Agency meeting.

## In-Lieu fee Estimated Payment for Secondary Edge Effect Impacts

Secondary Impact Edge Effects add an estimated **\$395,765.44** to the fee.



Table 6. In-Lieu Fee Calculation Secondary Impacts

NHDES AQUATIC RESOURCE MITIGATION FUND WETLAND PAYMENT CALCULATION ***INSERT AMOUNTS IN YELLOW CELLS***			
<b>1</b>		<b>Convert square feet of impact to acres:</b>	
<b>INSERT SQ FT OF IMPACT</b>	Square feet of impact =		78,501
			43560.00
	Acres of impact =		1.8021
<b>2</b>		<b>Determine acreage of wetland construction:</b>	
	Forested wetlands:		2.7032
	Tidal wetlands:		5.4064
	All other areas:		2.7032
<b>3</b>		<b>Wetland construction cost:</b>	
	Forested wetlands:		\$241,153.18
	Tidal Wetlands:		\$482,306.36
	All other areas:		\$241,153.18
<b>4</b>		<b>Land acquisition cost (See land value table):</b>	
<b>INSERT LAND VALUE FROM TABLE WHICH APPEARS TO THE LEFT. (Insert the amount do not copy and paste.)</b>	Town land value:		32,795
	Forested wetlands:		\$88,651.36
	Tidal wetlands:		\$177,302.71
	All other areas:		\$88,651.36
<b>5</b>		<b>Construction + land costs:</b>	
	Forested wetland:		\$329,804.54
	Tidal wetlands:		\$659,609.07
	All other areas:		\$329,804.54
<b>6</b>		<b>NHDES Administrative cost:</b>	
	Forested wetlands:		\$65,960.91
	Tidal wetlands:		\$131,921.81
	All other areas:		\$65,960.91
*****		<b>TOTAL ARM PAYMENT*****</b>	
	Forested wetlands:		\$395,765.44
	Tidal wetlands:		\$791,530.89
	All other areas:		\$395,765.44

<sup>1</sup> The equalized land valuation for Derry and Londonderry are the same in the 2018 in-lieu fee calculator: \$32,795/acre.

## Vernal Pool Mitigation

The 2016 USACE Mitigation Guidance provides recommendations for in-lieu payments for vernal pool impacts with a multiplier based on the quality of the vernal pool. Vernal pool quality is evaluated using the USACE's "Vernal Pool Characterization" form<sup>2</sup> that provides a scoring system for low, medium, and high quality vernal pools based on the characteristics of the vernal pool itself and of the surrounding landscape. For Exit 4A, using the USACE scoring system in the 2013 Vernal Pool Characterization Form, there are 2 high quality and 6 medium quality vernal pools proposed to be impacted. Therefore, recommended mitigation under the USACE Guidance would be as provided in Table 9.

## In-Lieu Fee Estimated Payment for Vernal Pool Impacts

The 2016 USACE Guidance recommends a ratio pattern of 1:1 (low quality): 1:3 (medium quality): 1:5 (high quality) for in-lieu fee calculations. Using this guidance, the total area to be mitigated would be 169,561 square feet, or 3.89 acres.

**Table 7. USACE Recommended In- Lieu Fee Multiplier for Vernal Pool Impacts  
(from USACE 2016 Mitigation Guidance, Page 95)**

Vernal Pool Characterization	Recommended ratio for preservation	Square feet of impact proposed	Square Feet Impact x USACE multiplier
Medium	1:3	41,299	123,897
High	1:5	8,279	41,395
Low	1:1	471	471
	<b>TOTAL</b>	<b>50,049</b>	<b>165,763</b>

In addition to the in-lieu fee payment already calculated for the vernal pools under wetland impacts (1.15 acres forested wetland). The ARM fund payment for the additional 3.89 acres is estimated at \$835,701.36 as detailed in Table 8.

<sup>2</sup><http://www.nae.usace.army.mil/Portals/74/docs/regulatory/StateGeneralPermits/NEGP/VPCharacterizationFormDRAFT.pdf>

Table 8 In-Lieu Fee Calculation for Vernal Pools

<b>NHDES AQUATIC RESOURCE MITIGATION FUND</b> <b>WETLAND PAYMENT CALCULATION</b> <b>***INSERT AMOUNTS IN YELLOW CELLS***</b>			
<b>1</b>	<b>Convert square feet of impact to acres:</b>		
<b>INSERT SQ FT OF IMPACT</b>	Square feet of impact =		165,763
			43,560
	Acres of impact =		3.8054
<b>2</b>	<b>Determine acreage of wetland construction:</b>		
	Forested wetlands:		5.7081
	Tidal wetlands:		11.4162
	All other areas:		5.7081
<b>3</b>	<b>Wetland construction cost:</b>		
	Forested wetlands:		\$509,220.91
	Tidal Wetlands:		\$1,018,441.82
	All other areas:		\$509,220.91
<b>4</b>	<b>Land acquisition cost (See land value table):</b>		
<b>INSERT LAND VALUE FROM TABLE WHICH APPEARS TO THE LEFT. (Insert the amount do not copy and paste.)</b>	Town land value:		32795
	Forested wetlands:		\$187,196.89
	Tidal wetlands:		\$374,393.77
	All other areas:		\$187,196.89
<b>5</b>	<b>Construction + land costs:</b>		
	Forested wetland:		\$696,417.80
	Tidal wetlands:		\$1,392,835.59
	All other areas:		\$696,417.80
<b>6</b>	<b>NHDES Administrative cost:</b>		
	Forested wetlands:		\$139,283.56
	Tidal wetlands:		\$278,567.12
	All other areas:		\$139,283.56
<b>***** TOTAL ARM PAYMENT*****</b>			
	Forested wetlands:		\$835,701.36
	Tidal wetlands:		\$1,671,402.71
	All other areas:		\$835,701.36



## Stream Mitigation

### NHDES Stream Mitigation

Linear feet of stream and bank impacts are provided in the wetland application. Stream crossing 5, downstream of the Prime Wetland on Tsienneto Road, is assumed to be self-mitigating. All other linear feet of stream impact were included in the in-lieu fee calculation. Stream mitigation funding may be further reduced by the SPIP.

Table 9 In-Lieu Fee Calculation for Stream Impacts

NHDES AQUATIC RESOURCE MITIGATION FUND STREAM PAYMENT CALCULATION		
INSERT LINEAR FEET OF IMPACT on BOTH BANKS AND CHANNEL	Right Bank	266
	Left Bank	85
	Channel	2,208
	TOTAL IMPACT	2,559
Stream Impact Cost:		\$528,177.60
NHDES Administrative cost:		
		\$105,635.52
***** TOTAL ARM FUND STREAM PAYMENT*****		
\$633,813.12		

## **Photographs**

Photographs of wetlands proposed to be impacts can be found in Appendix J of the SDEIS.

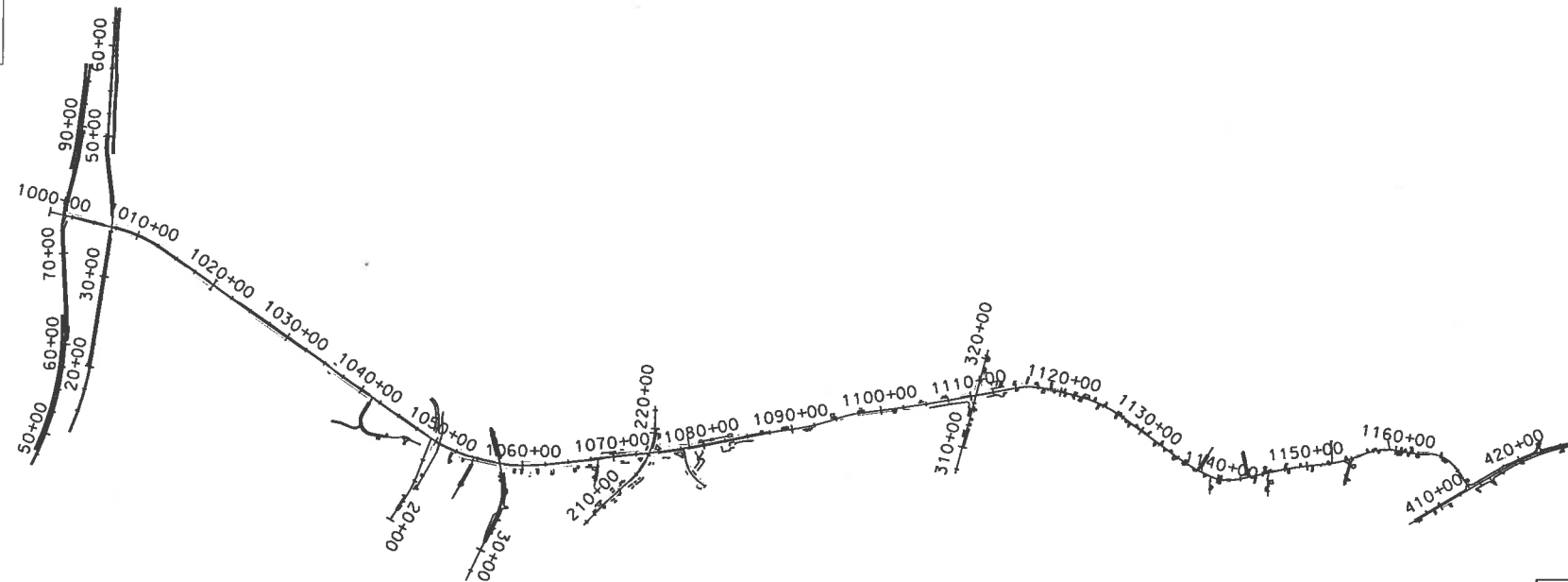
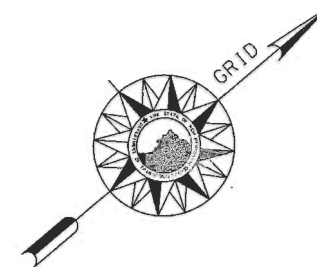
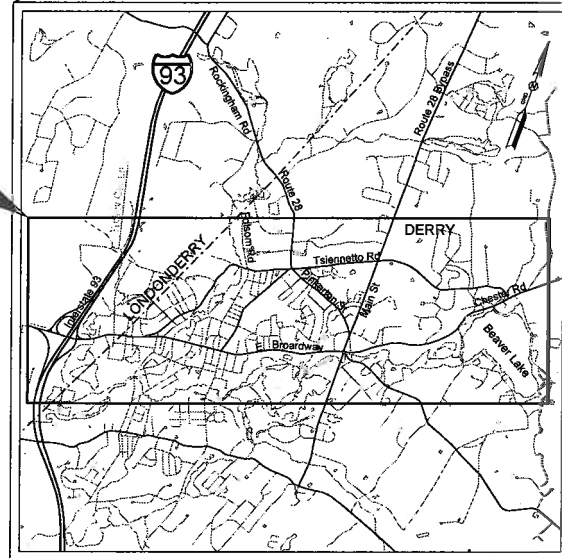
INDEX OF SHEETS

1	FRONT SHEET
2-3	STANDARD SYMBOLS
4	WETLAND IMPACT TABLES
5-25	WETLAND IMPACT PLANS

STATE OF NEW HAMPSHIRE  
DEPARTMENT OF TRANSPORTATION

**WETLAND PLANS**  
**I-93 EXIT 4A DERRY-LONDONDERRY**  
**FEDERAL PROJECT IM-0931(201)**  
**NH PROJECT 13065**

13065



September 25, 2018

DRAWN BY: MCS  
CHECKED BY: NCF  
DATE: 09/21/2018  
DATE: 09/21/2018

**TOWNS OF LONDONDERRY & DERRY**  
**COUNTY OF ROCKINGHAM**  
**SCALE : 1" = 1000'**  
**FOR CONSTRUCTION AND ALIGNMENT DETAILS -**  
**SEE CONSTRUCTION PLANS**

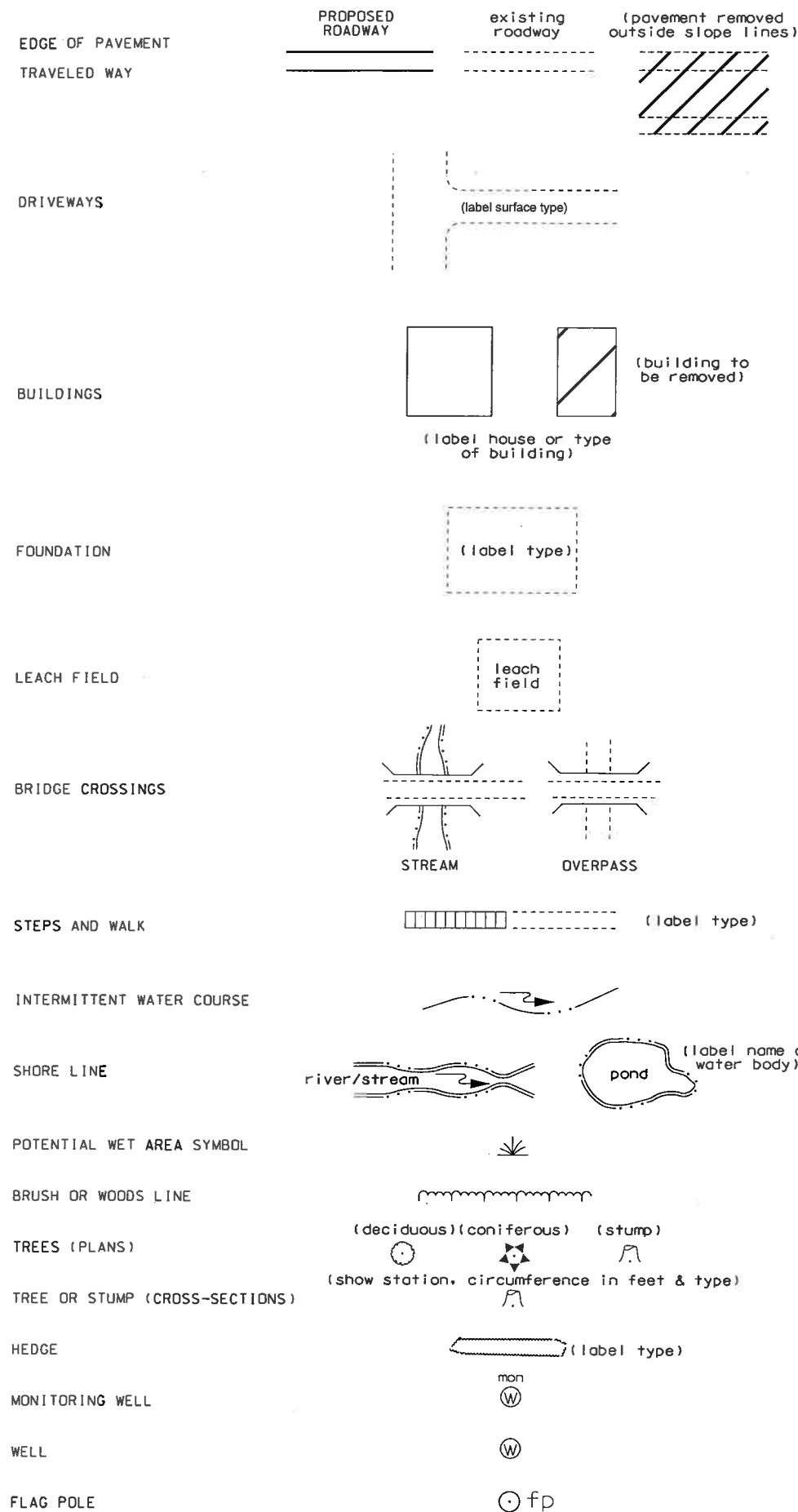


<b>NHDOT</b> THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION			
RECOMMENDED FOR APPROVAL:			
_____ DIRECTOR OF PROJECT DEVELOPMENT		_____ DATE	
APPROVED:			
_____ ASSISTANT COMMISSIONER AND CHIEF ENGINEER		_____ DATE	
U. S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION			
APPROVED:			
_____ DIVISION ADMINISTRATOR		_____ DATE	
FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
IM-0931(201)	13065	1	25

10/28/2018



## GENERAL

ORIGINAL GROUND  
(TYPICALS)

ROCK OUTCROP

ROCK LINE  
(TYPICALS & SECTIONS ONLY)

GUARDRAIL (label type)

JERSEY BARRIER

CURB (LABEL TYPE)

STONE WALL

RETAINING WALL (LABEL TYPE)

FENCE (LABEL TYPE)

SIGNS

GAS PUMP

FUEL TANK (ABOVE GROUND)

STORAGE TANK FILLER CAP

SEPTIC TANK

GRAVE

MAILBOX

VENT PIPE

SATELLITE DISH ANTENNA

PHONE

GROUND LIGHT/LAMP POST

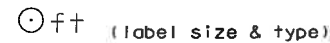
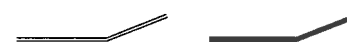
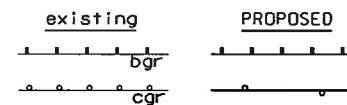
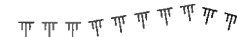
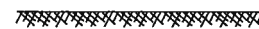
BORING LOCATION

TEST PIT

INTERSTATE NUMBERED HIGHWAY

UNITED STATES NUMBERED HIGHWAY

STATE NUMBERED HIGHWAY



## SHORELAND - WETLAND

WETLAND DESIGNATION AND TYPE

DELINEATED WETLAND

ORDINARY HIGH WATER

TOP OF BANK

TOP OF BANK & ORDINARY HIGH WATER

NORMAL HIGH WATER

WIDTH AT BANK FULL

PRIME WETLAND

PRIME WETLAND 100' BUFFER

NON-JURISDICTIONAL DRAINAGE AREA

COWARDIN DISTINCTION LINE

TIDAL BUFFER ZONE

DEVELOPED TIDAL BUFFER ZONE

HIGHEST OBSERVABLE TIDE LINE

MEAN HIGH WATER

MEAN LOW WATER

VERNAL POOL

SPECIAL AQUATIC SITE

REFERENCE LINE

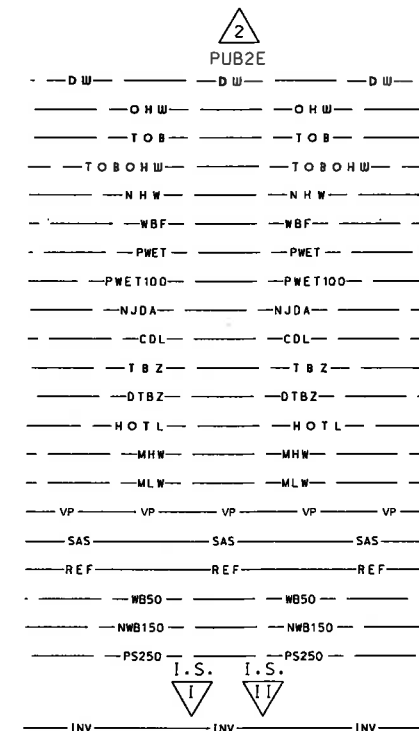
WATER FRONT BUFFER

NATURAL WOODLAND BUFFER

PROTECTED SHORELAND

INVASIVE SPECIES LABEL

INVASIVE SPECIES

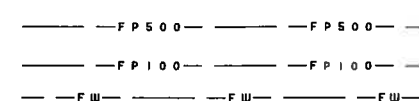


## FLOODPLAIN / FLOODWAY

500 YEAR FLOODPLAIN BOUNDARY

100 YEAR FLOODPLAIN BOUNDARY

FLOODWAY



## ENGINEERING

CONSTRUCTION BASELINE

PC, PT, POT (ON CONST BASELINE)

PI (IN CONSTRUCTION BASELINES)

INTERSECTION OR EQUATION OF TWO LINES

ORIGINAL GROUND LINE  
(PROFILES AND CROSS-SECTIONS)PROFILE GRADE LINE  
(PROFILES AND CROSS-SECTIONS)

CLEARING LINE

SLOPE LINE

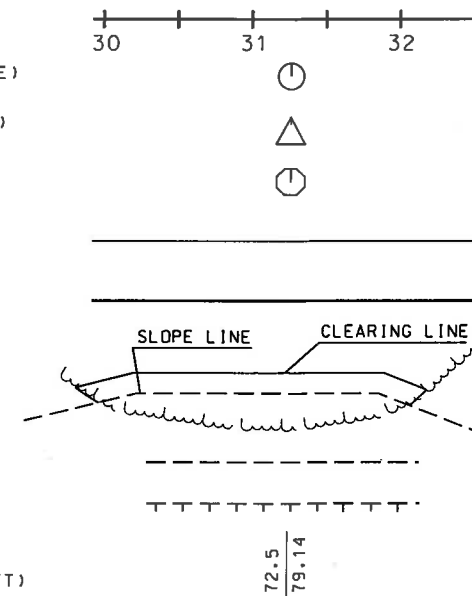
SLOPE LINE (FILL)

SLOPE LINE (CUT)

PROFILES AND CROSS SECTIONS:

ORIGINAL GROUND ELEVATION (LEFT)

FINISHED GRADE ELEVATION (RIGHT)



SHEET 1 OF 2

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

STANDARD SYMBOLS

REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
11-21-2014	13065STDSYM	13065	2	25

## DRAINAGE

**MANHOLE**

**CATCH BASIN**

**DROP INLET**

**DRAINAGE PIPE (existing)**

**DRAINAGE PIPE (PROPOSED)**

**UNDERDRAIN (existing) W/ FLUSHING BASIN**

**UNDERDRAIN (PROPOSED) W/ FLUSHING BASIN**

**HEADER (existing & PROPOSED)**

**END SECTION (existing & PROPOSED)**

**OPEN DITCH (PROPOSED)**

**EROSION CONTROL/ STONE SLOPE PROTECTION**

(existing)

(PROPOSED)

show direction of flow

(label size & type)












(label size & type)

(with stone outlet protection)

METAL or PLASTIC

RCP

## BOUNDARIES / RIGHT-OF-WAY

RIGHT-OF-WAY LINE	_____ (label type)
RR RIGHT-OF-WAY LINE	_____
PROPERTY LINE	_____ P _____ P _____
PROPERTY LINE (COMMON OWNER)	_____ Z _____ Z _____
TOWN LINE	_____ BOW _____ CONCORD
COUNTY LINE	_____ COOS _____ GRAFTON
STATE LINE	_____ MAINE _____ NEW HAMPSHIRE
NATIONAL FOREST	_____ . _____ . _____
CONSERVATION LAND	_____ -LC- _____ -LC- _____
BENCH MARK / SURVEY DISK	
BOUND	 bnd  (PROPOSED)
STATE LINE/ TOWN LINE MONUMENT	 S/L  T/L
NHDOT PROJECT MARKER	
IRON PIPE OR PIN	 i p
DRILL HOLE IN ROCK	 dh
TAX MAP AND LOT NUMBER	 1642/341 6.80 Ac. ±
PROPERTY PARCEL NUMBER	 12
HISTORIC PROPERTY	









## UTILITIES

	existing	PROPOSED
TELEPHONE POLE		
POWER POLE		
JOINT OCCUPANCY		
MISCELLANEOUS/UNKNOWN POLE		
GUY POLE OR PUSH BRACE		
LIGHT POLE		
LIGHT ON POWER POLE		
LIGHT ON JOINT POLE		
POLE STATUS: REMOVE, LEAVE, PROPOSED, OR TEMPORARY AS APPLICABLE e.g.:		
RAILROAD		
RAILROAD SIGN		
RAILROAD SIGNAL		
UTILITY JUNCTION BOX		
OVERHEAD WIRE		
UNDERGROUND UTILITIES		
WATER (on existing lines label size, type and note if abandoned)		
SEWER		
TELEPHONE		
ELECTRIC		
GAS		
LIGHTING		
INTELLIGENT TRANSPORTATION SYSTEM		
FIBER OPTIC		
WATER SHUT OFF		
GAS SHUT OFF		
HYDRANT		
MANHOLES		
SEWER		
TELEPHONE		
ELECTRICAL		
GAS		
UNKNOWN		

## TRAFFIC SIGNALS / ITS

	existing	PROPOSED
MAST ARM (existing)		
OPTICOM RECEIVER		
OPTICOM STROBE		
TRAFFIC SIGNAL		
PEDESTAL WITH PEDESTRIAN SIGNAL HEADS AND PUSH BUTTON UNIT		
SIGNAL CONDUIT		
CONTROLLER CABINET		
METER PEDESTAL		
PULL BOX		
LOOP DETECTOR (QUADRUPOLE)		
LOOP DETECTOR (RECTANGULAR)		
CAMERA POLE (CCTV)		
FIBER OPTIC DELINEATOR		
FIBER OPTIC SPLICE VAULT		
ITS EQUIPMENT CABINET		
VARIABLE SPEED LIMIT SIGN		
DYNAMIC MESSAGE SIGN		
ROAD AND WEATHER INFO SYSTEM		

## CONSTRUCTION NOTES

CURB MARK NUMBER - BITUMINOUS	B-1
CURB MARK NUMBER - GRANITE	G-1
CLEARING AND GRUBBING AREA	
DRAINAGE NOTE	
EROSION CONTROL NOTE	
FENCING NOTE	
GUARDRAIL NOTE	
ITS NOTE	
LIGHTING NOTE	
TRAFFIC SIGNAL NOTE	

SHEET 2 OF 2

STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
<i>STANDARD SYMBOLS</i>			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13065STDSYM	13065	3	25

[illegible]

WETLAND IMPACT SUMMARY									
WETLAND NUMBER	WETLAND CLASSIFICATION	LOCATION	AREA					TOWN	COMMENTS
			PERMANENT IMPACTS				TEMPORARY IMPACTS		
			N.H.W.B. (NON-WETLAND)	N.H.W.B. & A.C.O.E. (WETLAND)	BANK	CHANNEL			
			SF	SF	LF	LF	SF		
								L	
S1	R3UB3	A		805		36		L	
S1	R3UB3	B		5141		301		L	
14	PFO1/2E	C		265				L	
14	PFO1/2E	D		45				L	
14	PFO1/2E	E		6210				L	
15	PFO1E	F		4064				L	
VP2	VP	G		7236				L	
15	PFO1E	H		1324				L	
14	PFO1/2E	I		3538				L	
16	PFO1E	J		2336				L	
VP3	VP	K		6413				L	
16	PFO1E	L		507				L	
S1	R3UB3	M		8584		758		L	
S70	R4SB5	N		118		48		L	
14	PFO1/2E	O		3390				L	
14	PFO1/2E	P		8816				L	
14	PFO1/2E	Q		7613				L	
14	PFO1/2E	R		34930				L	
16	PFO1E	S		199				L	
VP4	VP	T		8279				L	
16	PFO1E	U		1258				L	
16	PFO1E	V		1423				L	
17	PFO1E	W		932				L	
S7	R4SB5	X		339		74		L	
17	PFO1E	Y		4070				L	
S7	R4SB5	Z		226		31		L	
S7	R4SB5	AA		239		72		L	
13	PFO1E	AB		1779				L	
66	PFO1E	AC		25				L	
11	PFO1E	AD		660				L	
11	PFO1E	AE		2351				L	
67	PFO1E	AF		1483				L	
11	PFO1E	AG		366				L	
11	PFO1E	AH		1883				L	
19	PFO1E	AI		9179				L	
VP42	VP	AJ		4844				L	
18	PEM1E	AK		659				L	
19	PFO1E	AL		1				L	
S8	R4SB5	AM		1232		291		L	
20	PFO1E	AN		273				L	
20	PFO1E	AO		1232				L	
21	PFO1E	AP		257				L	
VP46	VP	AQ		78				L	
22	PFO1E	AR		106				L	
68	PFO1E	AS		117				L	
24	PFO1E	AT		166				L	
VP6	VP	AU		13296				L	
24	PFO1E	AV		5				L	
24	PFO1E	AW		452				L	
24	PFO1E	AX		46				L	
24	PFO1E	AY		2597				L	
24	PFO1E	AZ		118				L	
35	PFO1E	BA		1181				L	
VP8	VP	BB		9510				L	
35	PFO1E	BC		21				L	
35	PFO1E	BD		301				L	
35	PFO1E	BE		5				L	
35	PFO1E	BF		489				L	
64	PFO1E	BG		75				D	
39	PEM1F	BH		4562				D	
S11	R4SB5	BI		77		77		D	
40	PSS1E	BJ		816				D	
41	PSS1E	BK		141				D	
S2	BANK	BL	477		215			D	
S2	R3UB3	BM		7412		396		D	
41	PFO1E	BN		6165				D	
S2	BANK	BO	72		32			D	

WETLAND IMPACT SUMMARY									
WETLAND NUMBER	WETLAND CLASSIFICATION	LOCATION	AREA				TOWN	COMMENTS	
			PERMANENT IMPACTS						TEMPORARY IMPACTS
			N.H.W.B. (NON-WETLAND)	N.H.W.B. & A.C.O.E. (WETLAND)	BANK	CHANNEL			
			SF	SF	LF	LF	SF		
								L	
41	PFO1E	BP		9183				D	
S2	BANK	BQ	161		51			D	
S2	R3UB3	BR		714		51		D	
S2	BANK	BS	169		53			D	
46	PFO1E	BT		254				D	
49	PFO1E	BU		2474				D	
64	PEM1E	BV		17				D	
63	PSS1E	BW		42				D	
63	PSS1E	BX		111				D	
60	PFO1E	BY		17				D	
61	PFO1E	BZ		511				D	
VP11	VP	CA		471				D	
S3	R4SB5	CB		100		12		D	
S3	R4SB5	CC		238		26		D	
S4	R4SB5	CD		28		28		D	
S4	R4SB5	CE		22		7		D	
59	PFO1E	CF		98				D	
56	PEM1E	CG		195				D	
59	PFO1E	CH		4489				D	
62	PSS/PEM1E	CI		2813				D	
59	PFO1E	CJ		9				D Prime wetland	
S5	R3UB3	CK		1548		73		D	
59	PFO1E	CL		14				D	
59	PFO1E	CM		418				D	
62	PSS/PEM1E	CN		57				D Prime wetland	

<b>TOTAL IMPACTS FOR WETLANDS</b>	
<b>WETLAND IMPACTS</b>	
PERMANENT IMPACTS (WETLAND)	216,083.00 SF
PERMANENT IMPACTS (NON-WETLAND)	879.00 SF
TEMPORARY IMPACTS	0.00 SF
<b>TOTAL WETLAND IMPACTS:</b>	<b>216,962.00 SF</b>
<b>STREAM IMPACTS</b>	
PERMANENT IMPACTS TO BANKS	351.00 LF
PERMANENT IMPACTS TO CHANNEL	2,281.00 LF
<b>TOTAL STREAM IMPACTS:</b>	<b>2,632.00 LF</b>

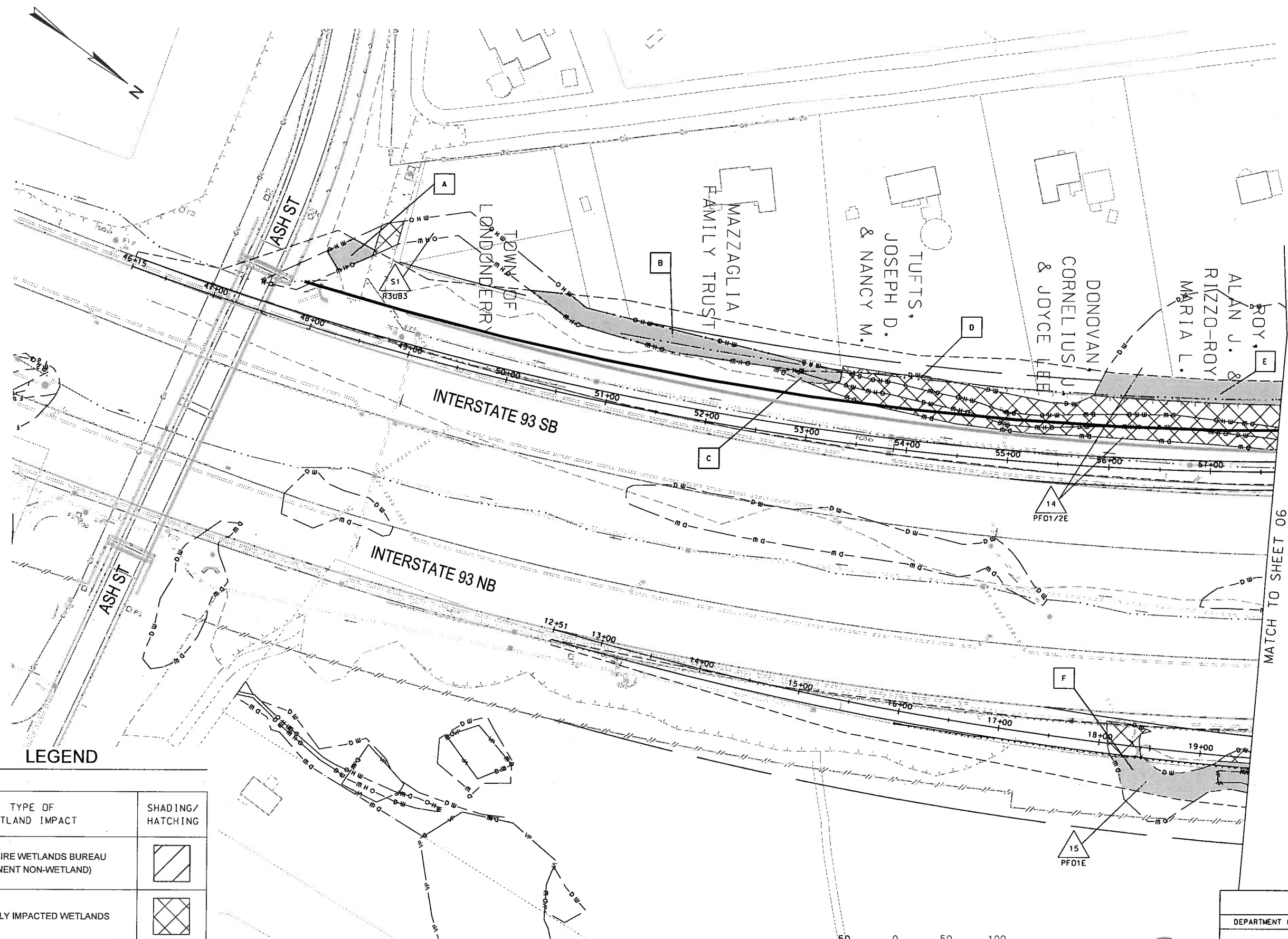
WETLAND CLASSIFICATION CODES	
BANK	BANK
PEM1E	PALUSTRINE, EMERGENT, PERSISTENT, SEASONALLY FLOODED /SATURATED
PEM1F	PALUSTRINE, EMERGENT, PERSISTENT, SEMIPERMANENTLY FLOODED
PF01/2E	ALUSTRINE, FORESTED, DOMINANTLY BROAD-LEAVED DECIDUOUS, MIXED WITH NEEDLE-LEAVED DECIDUOUS, SEASONALLY FLOODED /SATURATED
PF01E	PALUSTRINE, FORESTED, BROAD-LEAVED DECIDUOUS, SEASONALLY FLOODED /SATURATED
PSS/PEM1E	PALUSTRINE, DOMINANTLY SCRUB-SHRUB, MIXED WITH EMERGENT, PERSISTENT, SEASONALLY FLOODED /SATURATED
PSS1E	PALUSTRINE, SCRUB-SHRUB, BROAD-LEAVED DECIDUOUS, SEASONALLY FLOODED /SATURATED
R3UB3	RIVERINE, UPPER PERENNIAL, UNCONSOLIDATED BOTTOM, MUD
R4S85	RIVERINE, INTERMITTENT, STREAMBED, MUD
VP	VERNAL POOL






STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
WETLAND IMPACT PLAN			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13065TABLE	13065	4	25



SOR PROCESSED		DATE		REVISIONS AFTER PROPOSAL			
NEW DESIGN	EMM	DATE	09/21/2018	NUMBER	DATE	STATION	STATION
SHEET CHECKED	NCF	DATE	09/21/2018				
AS BUILT DETAILS		DATE					






TYPE OF WETLAND IMPACT	SHADING/ HATCHING
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	
PREVIOUSLY IMPACTED WETLANDS	
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	

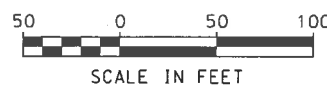
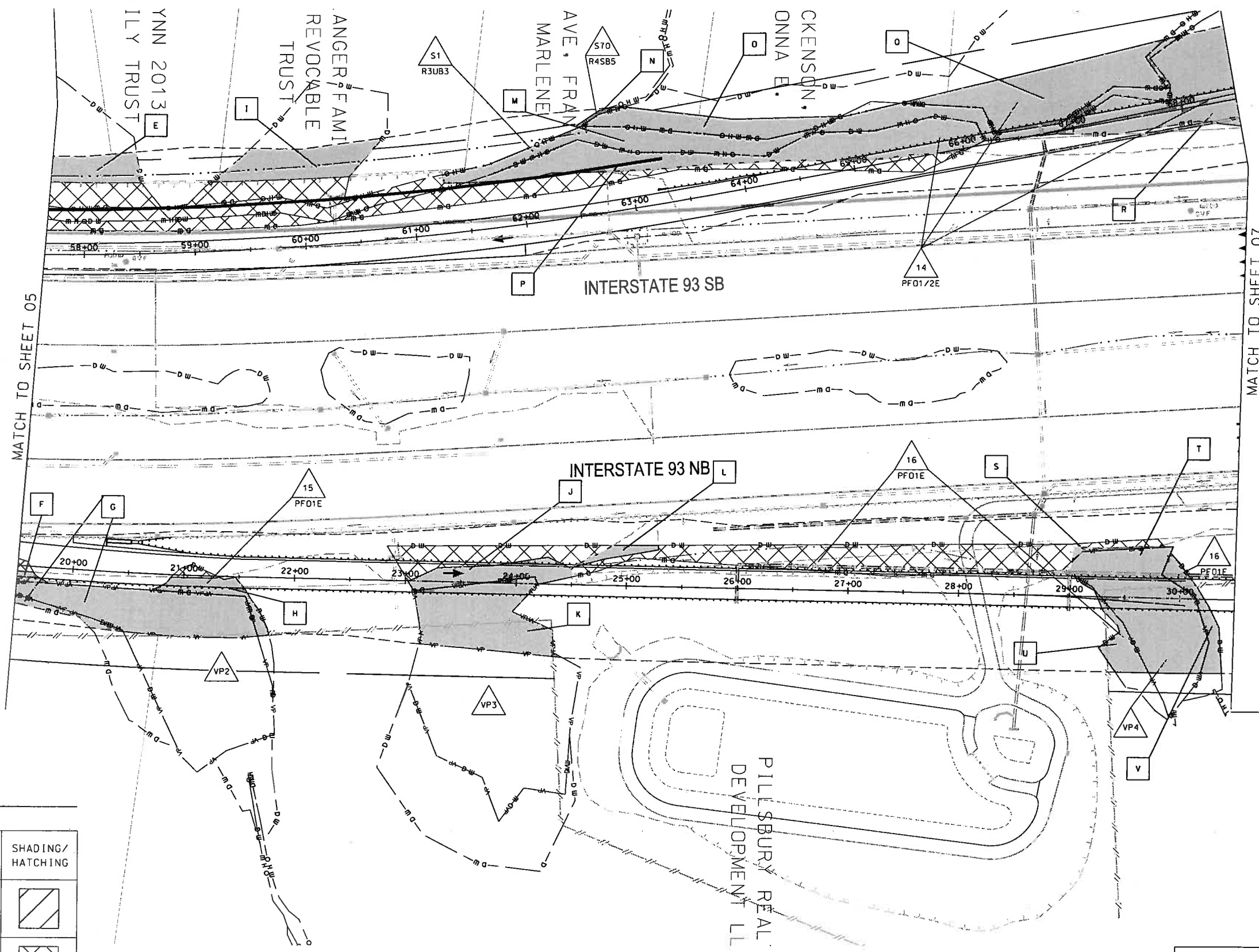


STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
WETLAND IMPACT PLAN			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13065WETL	13065	5	25

SDR PROCESSED		REVISIONS AFTER PROPOSAL	
DATE	DESCRIPTION	STATION	DATE
NEW DESIGN	DATE	09/21/2018	
SHEET CHECKED	DATE	09/21/2018	
AS BUILT DETAILS	DATE		

### LEGEND

TYPE OF WETLAND IMPACT	SHADING/HATCHING
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	
PREVIOUSLY IMPACTED WETLANDS	
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	



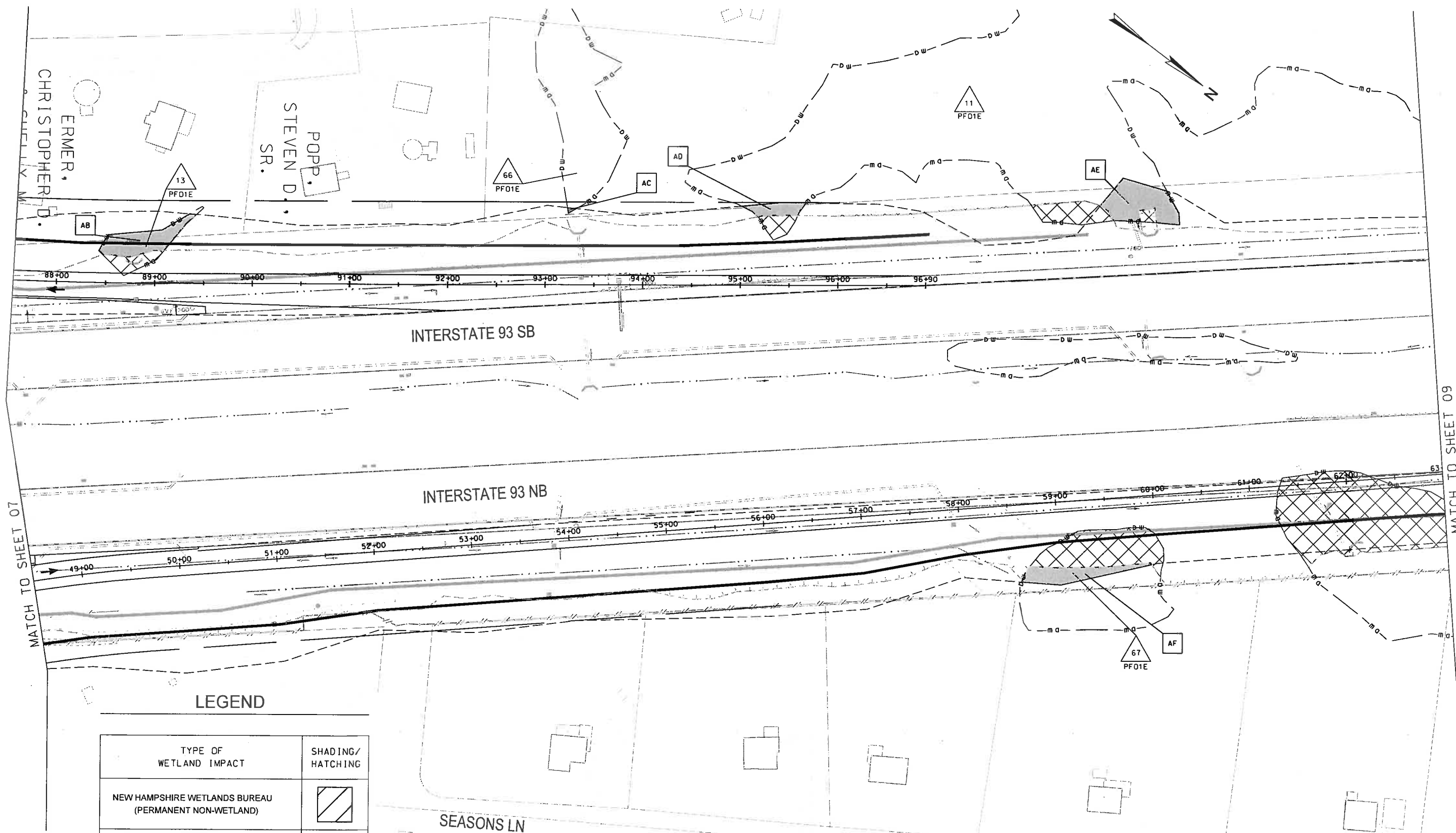
STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
WETLAND IMPACT PLAN			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13065WE TL	13065	6	25





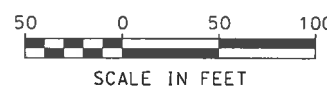
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NEW DESIGN	DATE	09/21/2018	DATE	09/21/2018	DATE	09/21/2018	DATE
SHEET CHECKED	NCF		SHEET CHECKED	NCF		SHEET CHECKED	NCF
AS BUILT DETAILS	DATE		AS BUILT DETAILS	DATE		AS BUILT DETAILS	DATE

REVISIONS AFTER PROPOSAL		STATION		STATION		STATION	
NUMBER	DATE						



LEGEND

TYPE OF WETLAND IMPACT	SHADING/HATCHING
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	
PREVIOUSLY IMPACTED WETLANDS	
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	



STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
WETLAND IMPACT PLAN			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13065WETL	13065	8	25

MATCH TO SHEET 09

MATCH TO SHEET 07



SDR PROCESSED	DATE
NEW DESIGN	DATE
SHEET CHECKED	DATE
AS BUILT DETAILS	DATE

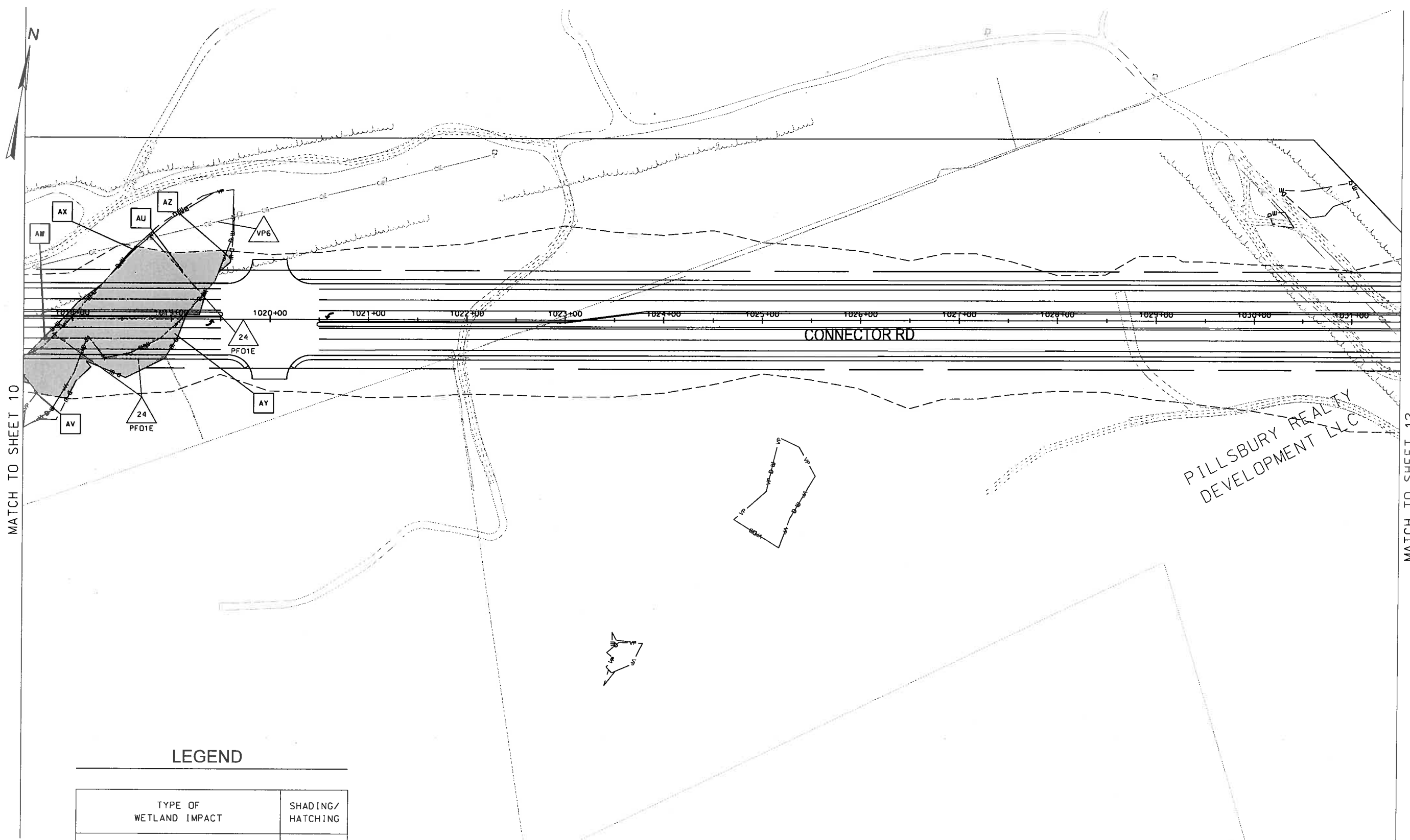




TYPE OF WETLAND IMPACT	SHADING/ HATCHING
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	

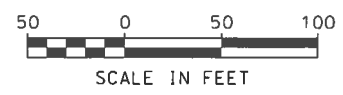
STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
WETLAND IMPACT PLAN			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13065WETL	13065	10	25





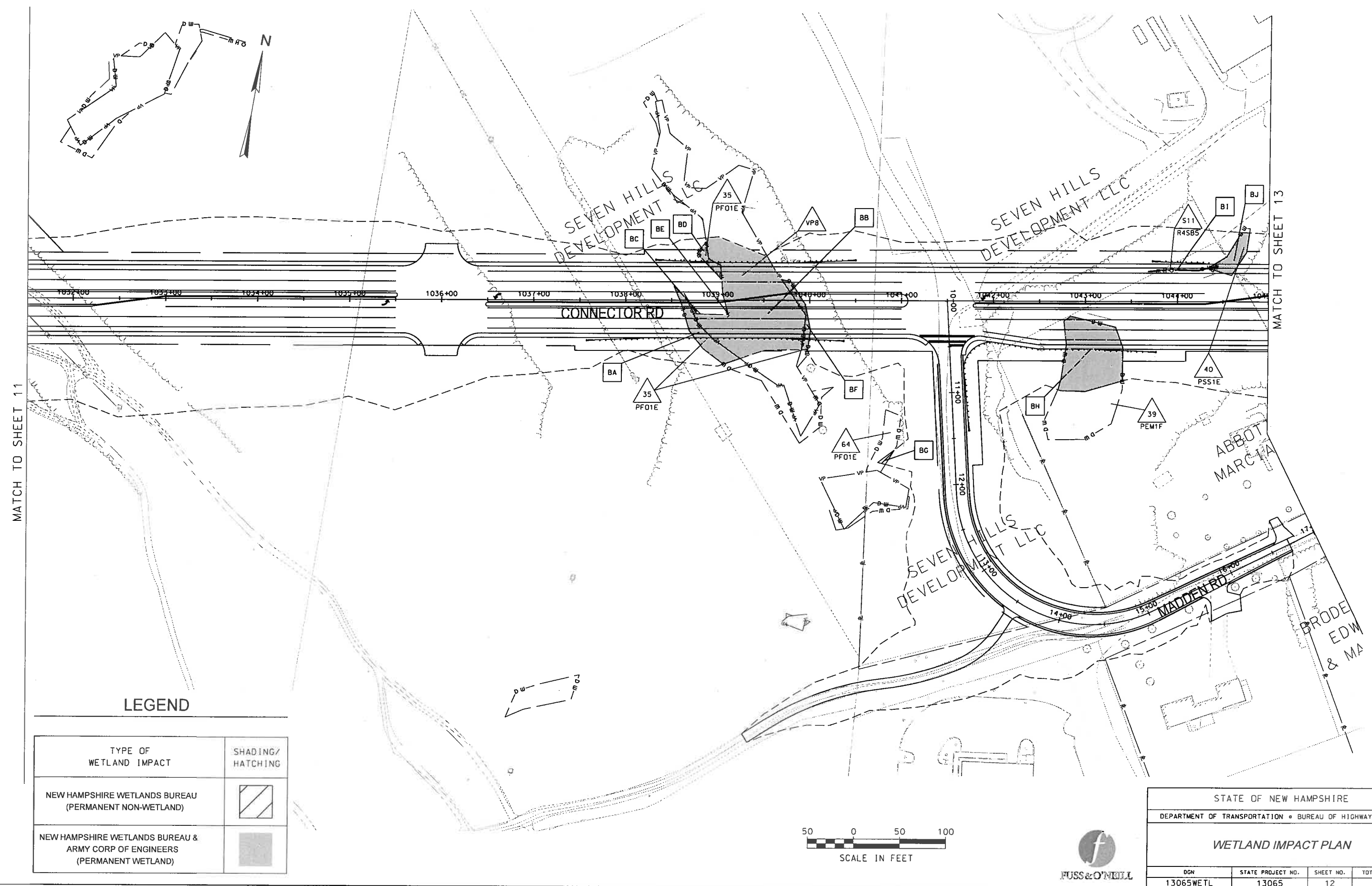
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LEGEND	
TYPE OF WETLAND IMPACT	SHADING/ HATCHING
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	



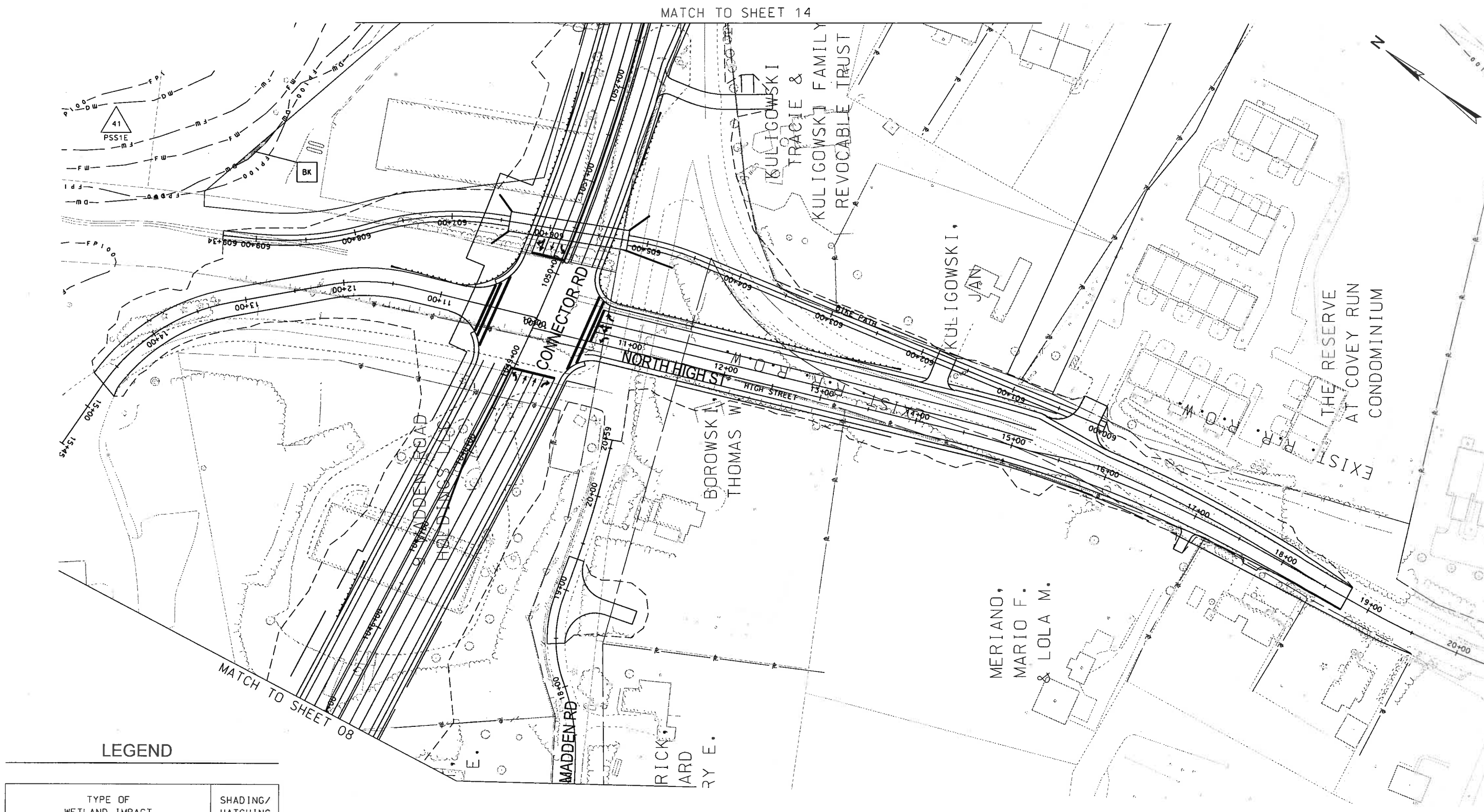
STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
WETLAND IMPACT PLAN			
DCN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13065WETL	13065	11	25

SOR PROCESSED		REVISIONS AFTER PROPOSAL			
DATE		NUMBER	DATE	STATION	DESCRIPTION
NEW DESIGN	EMM	DATE	09/21/2018		
SHEET CHECKED	NCF	DATE	09/21/2018		
AS BUILT DETAILS		DATE			



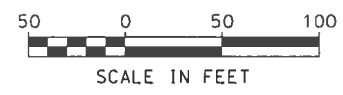
STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
WETLAND IMPACT PLAN			
DCN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13065WETL	13065	12	25

DATE		DATE		DATE		DATE		DATE	
NEW DESIGN		SHEET CHECKED		AS BUILT DETAILS		NEW DESIGN		SHEET CHECKED	
EMM		NCF				EMM		NCF	
09/21/2018		09/21/2018				09/21/2018		09/21/2018	
SDR PROCESSED									
NUMBER		DATE		STATION		STATION		REVISIONS AFTER PROPOSAL	
								DESCRIPTION	



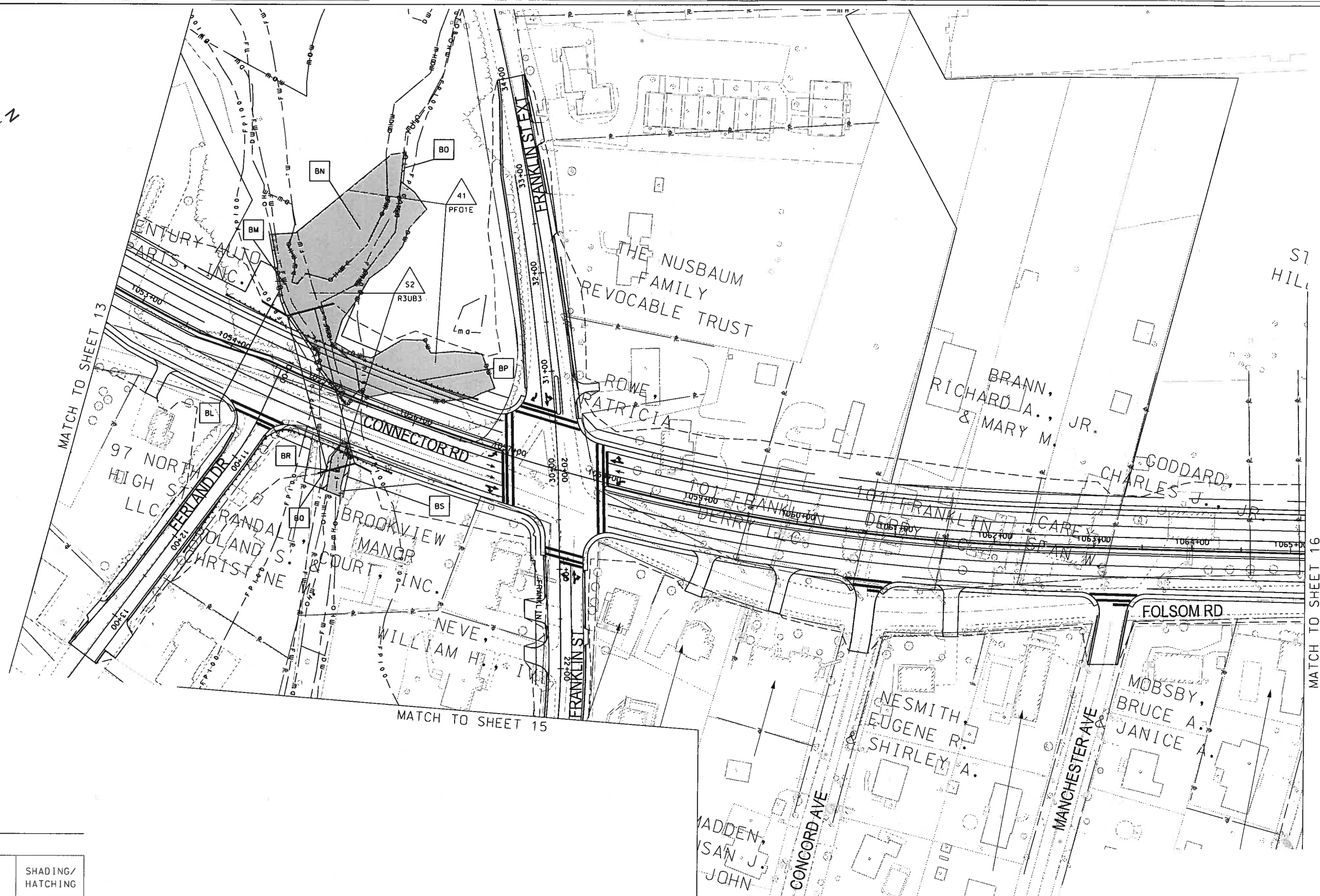
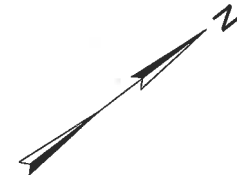
LEGEND

TYPE OF WETLAND IMPACT	SHADING/HATCHING
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	





STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
WETLAND IMPACT PLAN			
DCN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13065WETL	13065	13	25

SDR PROCESSED			REVISIONS AFTER PROPOSAL			
NEW DESIGN	EMM	DATE	NUMBER	DATE	STATION	DESCRIPTION
		09/21/2018				
SHEET CHECKED	NCF	DATE				
AS BUILT DETAILS						
		DATE				



## LEGEND

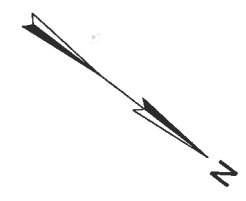
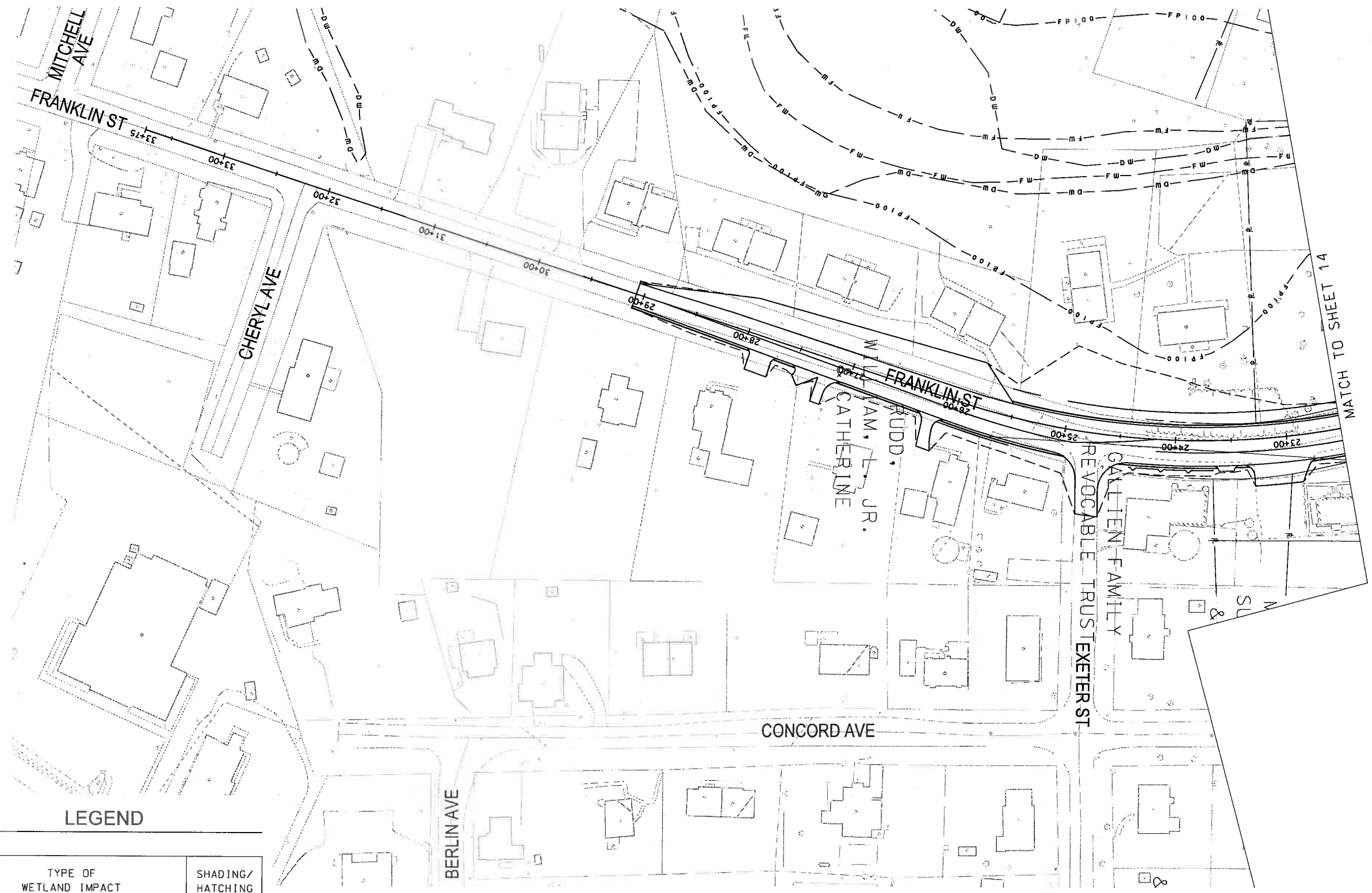
TYPE OF WETLAND IMPACT	SHADING/ HATCHING
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	





STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
WETLAND IMPACT PLAN			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13065WETL	13065	14	25



SDR PROCESSED		DATE		REVISIONS AFTER PROPOSAL			
NEW DESIGN	EMA	DATE	09/21/2018	NUMBER	DATE	STATION	STATION
SHEET CHECKED	NCF	DATE	09/21/2018				
AS BUILT DETAILS							
DATE							

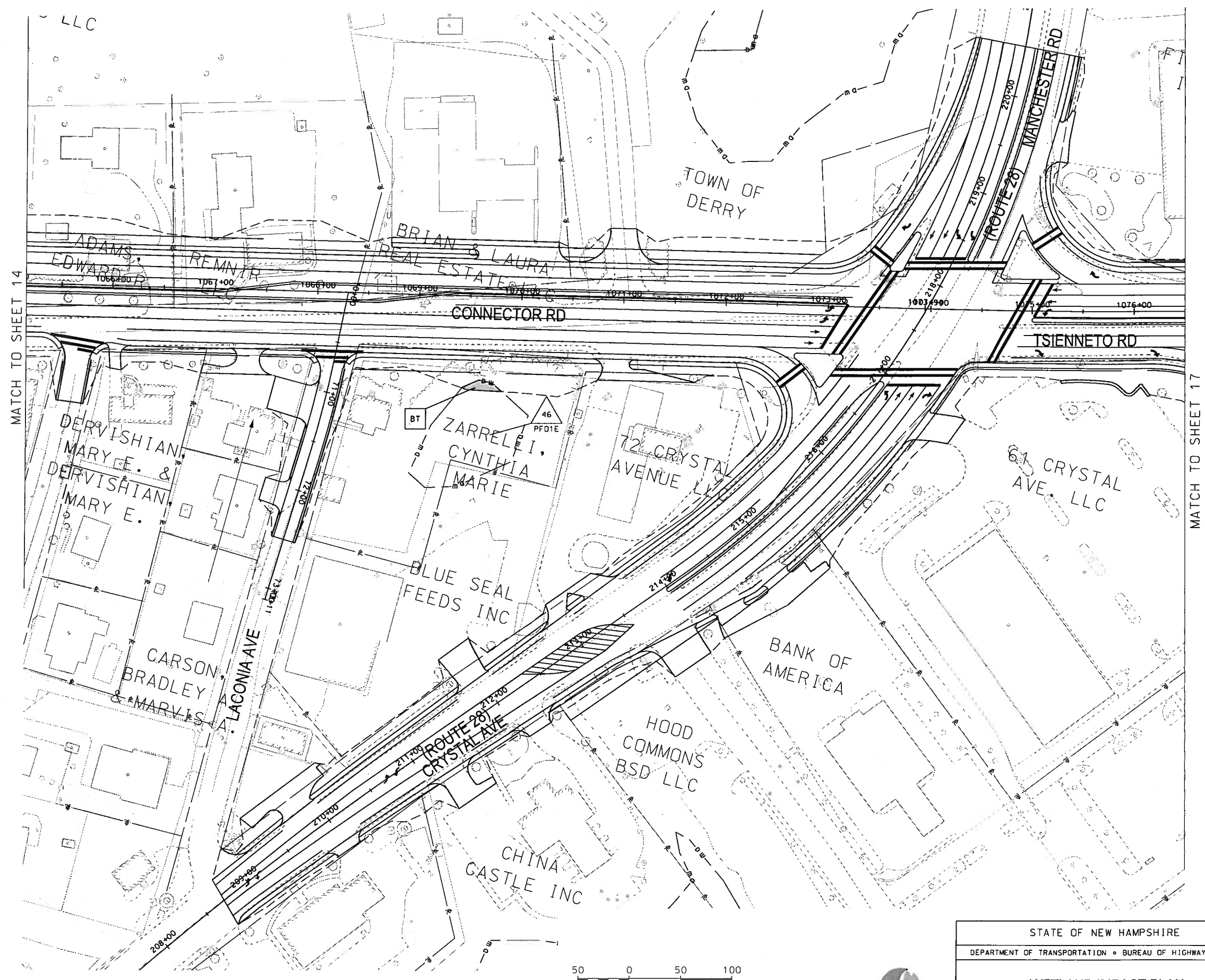




## LEGEND

TYPE OF WETLAND IMPACT	SHADING/ HATCHING
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	



STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
WETLAND IMPACT PLAN			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13065WETL	13065	15	25

[illegible]

LEGEND	
TYPE OF WETLAND IMPACT	SHADING/ HATCHING
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	





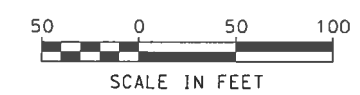
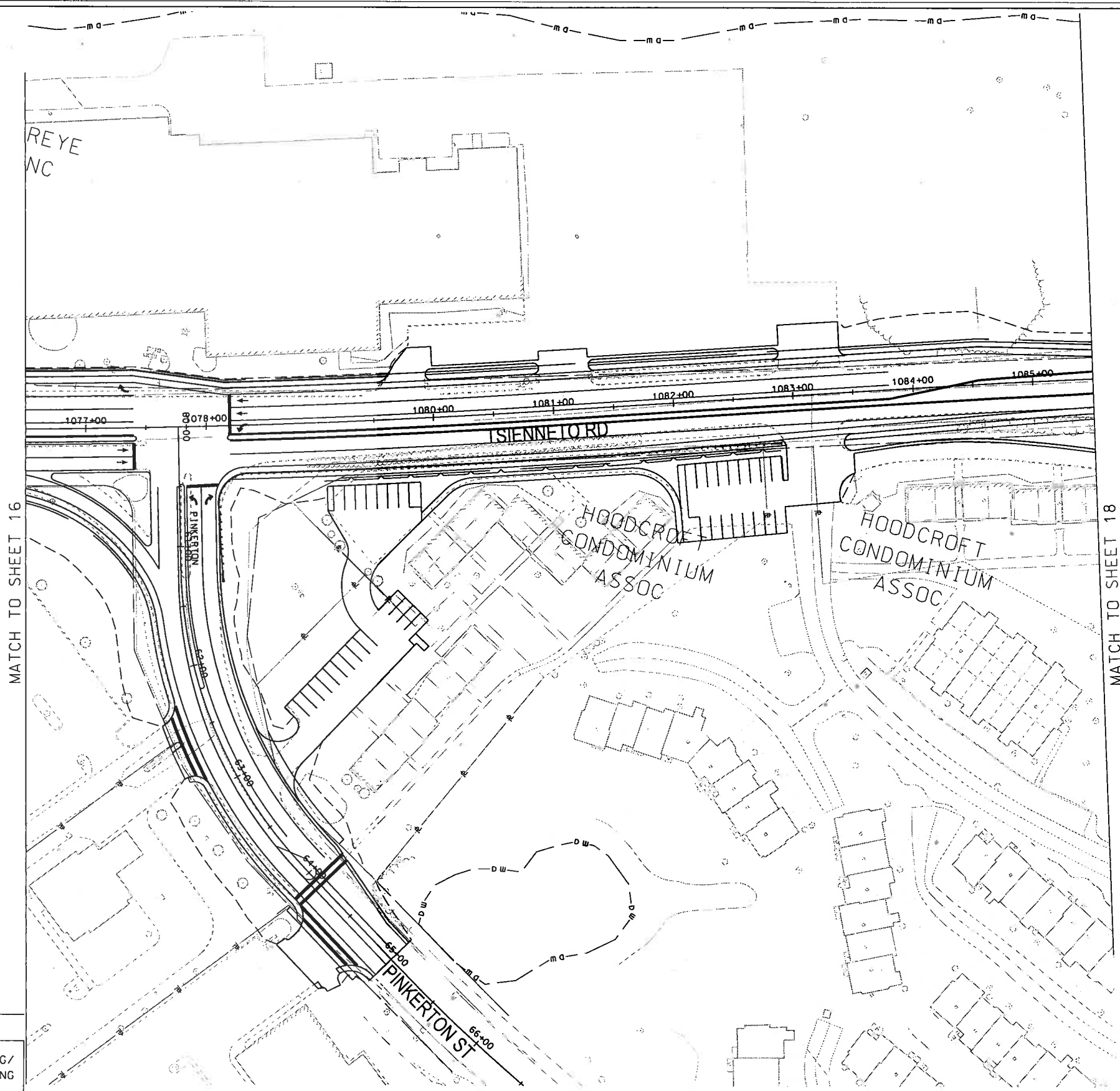
STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
WETLAND IMPACT PLAN			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13065WETL	13065	16	25

SDR PROCESSED		DATE		DATE		DATE		DATE		DATE	
NEW DESIGN	EMM	DATE	09/21/2018	DATE	09/21/2018	DATE	09/21/2018	DATE	09/21/2018	DATE	09/21/2018
SHEET CHECKED	NCF										
AS BUILT DETAILS											

REVISIONS AFTER PROPOSAL		STATION		STATION		STATION		STATION		STATION	
NUMBER	DATE										

LEGEND



TYPE OF WETLAND IMPACT	SHADING/HATCHING
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	

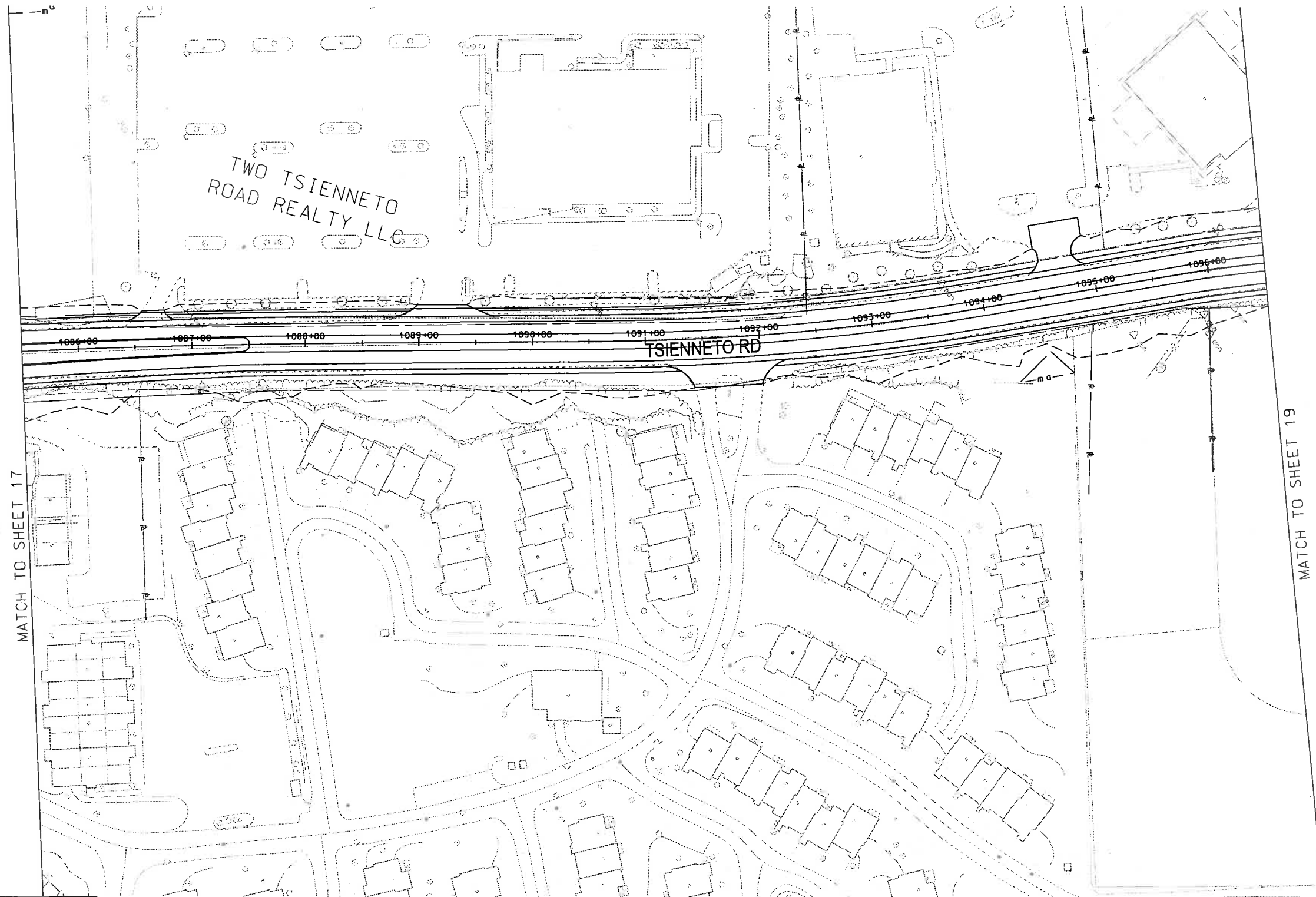


STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
WETLAND IMPACT PLAN			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13065WETL	13065	17	25

SJR PROCESSED		DATE		REVISIONS AFTER PROPOSAL	
NEW DESIGN	EMM	DATE	09/21/2018	STATION	DESCRIPTION
SHEET CHECKED	NCF	DATE	09/21/2018	NUMBER	DATE
AS BUILT DETAILS		DATE			

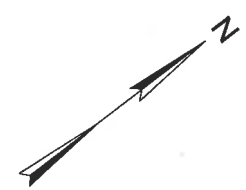
LEGEND

TYPE OF WETLAND IMPACT	SHADING/HATCHING
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	



STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
WETLAND IMPACT PLAN			
DGN 13065WETL	STATE PROJECT NO. 13065	SHEET NO. 18	TOTAL SHEETS 25



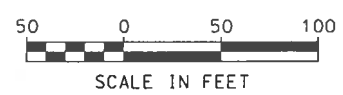
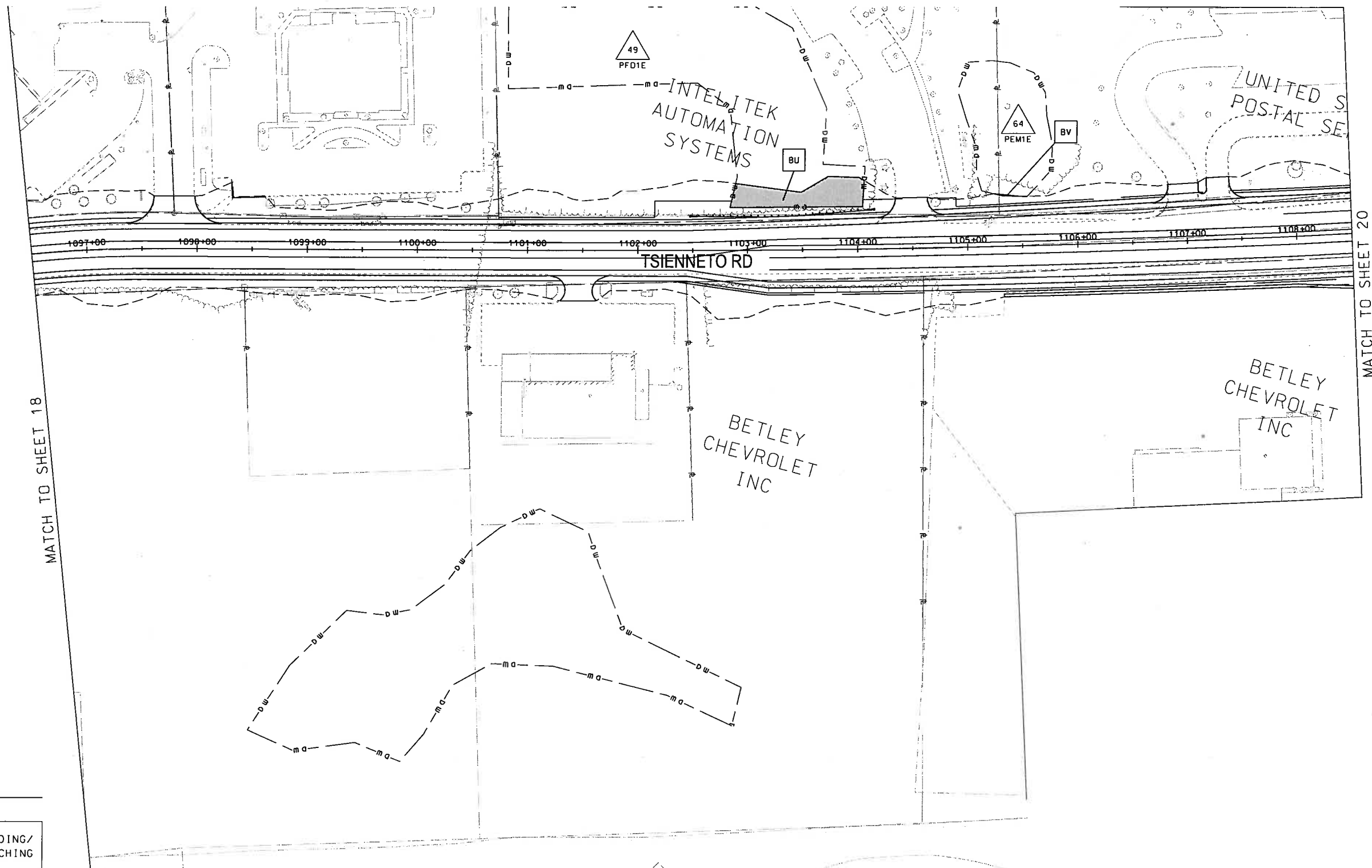


SDR PROCESSED		DATE		DATE		DATE		DATE		DATE	
NEW DESIGN	EMM	DATE	09/21/2018	DATE	09/21/2018	DATE	09/21/2018	DATE	09/21/2018	DATE	09/21/2018
SHEET CHECKED	NCF	DATE		DATE		DATE		DATE		DATE	
AS BUILT DETAILS		DATE		DATE		DATE		DATE		DATE	

REVISIONS AFTER PROPOSAL		DATE		STATION		STATION		DESCRIPTION	
NUMBER		DATE		STATION		STATION		DESCRIPTION	



LEGEND

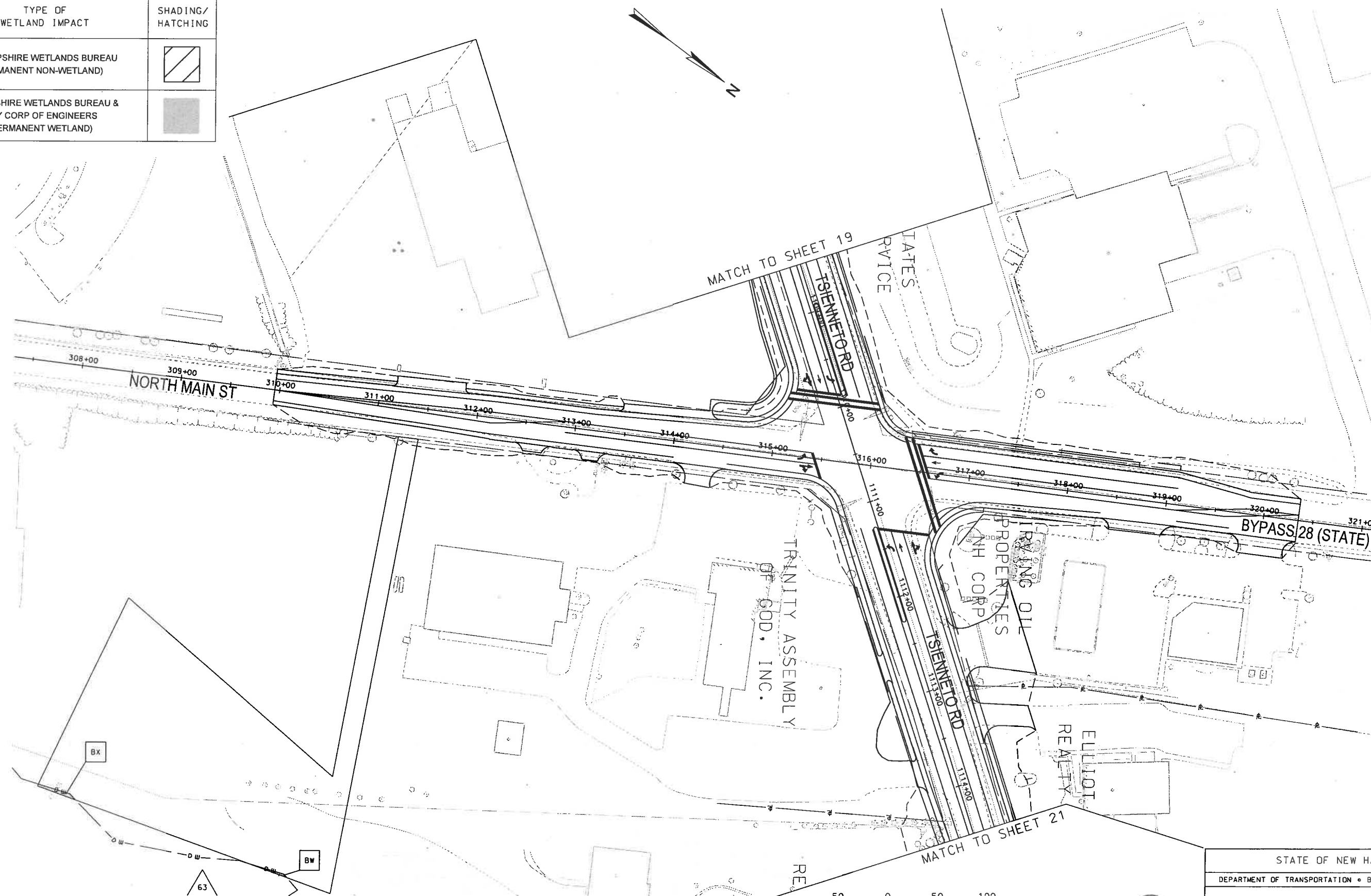
TYPE OF WETLAND IMPACT	SHADING/HATCHING
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	



STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
WETLAND IMPACT PLAN			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13065WETL	13065	19	25

## LEGEND



TYPE OF WETLAND IMPACT	SHADING/ HATCHING
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	



STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
WETLAND IMPACT PLAN			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13065WFTI	13065	20	25

SDR PROCESSED		DATE		
NEW DESIGN	EMM	DATE	09/21/2018	
SHEET CHECKED	NCF	DATE	09/21/2018	
AS BUILT DETAILS		DATE		
NUMBER	DATE	STATION	REVISIONS AFTER PROPOSAL	

LEGEND

TYPE OF WETLAND IMPACT	SHADING/HATCHING
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	



REVISIONS AFTER PROPOSAL		STATION	DATE	DESCRIPTION
SDR PROCESSED	DATE	09/21/2018		
NEW DESIGN	DATE	09/21/2018		
SHEET CHECKED	DATE	09/21/2018		
AS BUILT DETAILS	DATE			



STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
WETLAND IMPACT PLAN			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13065WETL	13065	21	25

SDR PROCESSED	DATE				REVISIONS AFTER PROPOSAL			
	DATE				STATION			
	DATE				STATION			
	DATE				STATION			
NEW DESIGN	DATE				STATION			
	DATE				STATION			
	DATE				STATION			
	DATE				STATION			
SHEET CHECKED	DATE				STATION			
	DATE				STATION			
	DATE				STATION			
	DATE				STATION			
AS BUILT DETAILS	DATE				STATION			
	DATE				STATION			
	DATE				STATION			
	DATE				STATION			

LEGEND



TYPE OF WETLAND IMPACT	SHADING/HATCHING
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	

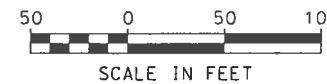
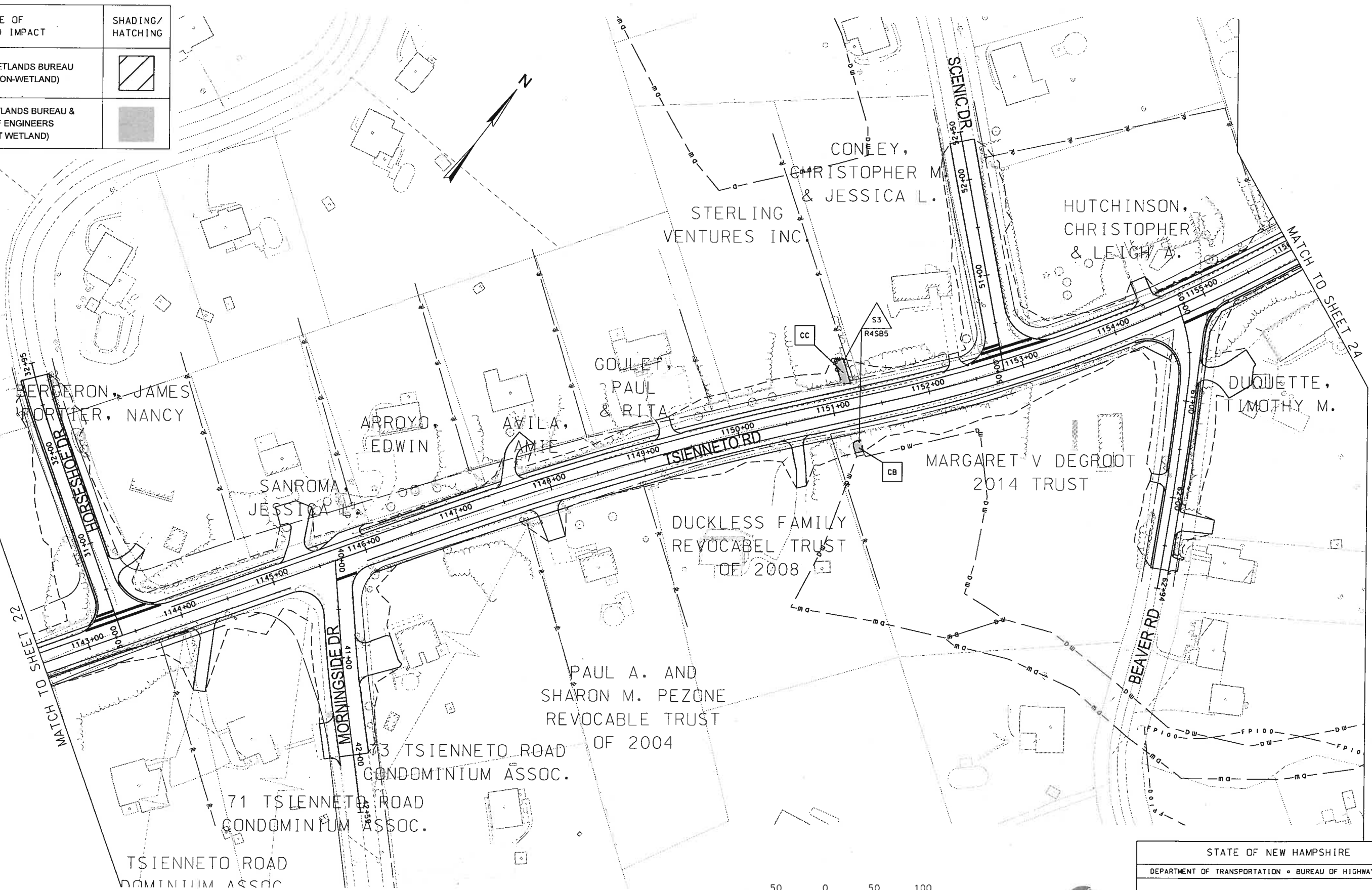


STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
WETLAND IMPACT PLAN			
DCW	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13065WETL	13065	22	25



## LEGEND

TYPE OF WETLAND IMPACT	SHADING/ HATCHING
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	



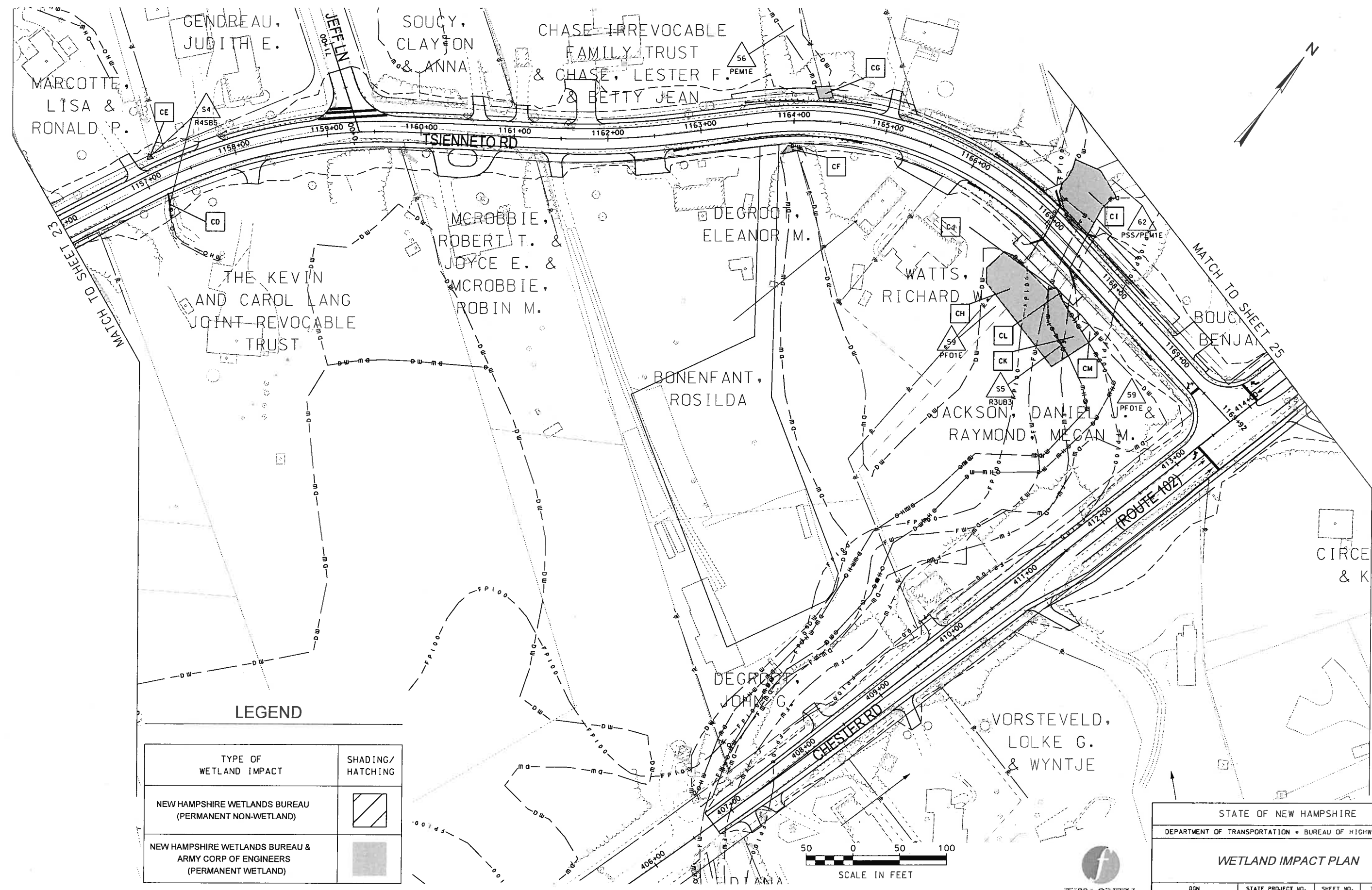
STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
WETLAND IMPACT PLAN			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13065WETL	13065	23	25

SDR PROCESSED		DATE
NEW DESIGN	EMM	DATE 09/21/2018
SHEET CHECKED	NCF	DATE 09/21/2018
AS BUILT DETAILS		DATE

REVISIONS AFTER PROPOSAL				
NUMBER	DATE	STATION	STATION	DESCRIPTION

REVISIONS AFTER PROPOSAL		STATION		DATE		DESCRIPTION	
NUMBER	DATE	STATION	DATE	NUMBER	DATE	DESCRIPTION	DATE

SDR PROCESSED	DATE	DATE	DATE	DATE
NEW DESIGN	09/21/2018	09/21/2018	09/21/2018	09/21/2018
SHEET CHECKED	EMM	NCF		
AS BUILT DETAILS				



**LEGEND**

TYPE OF WETLAND IMPACT	SHADING/HATCHING
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	



STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
<b>WETLAND IMPACT PLAN</b>			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13065WETL	13065	24	25

SDR PROCESSED				REVISIONS AFTER PROPOSAL			
DATE	DATE	DATE	DATE	NUMBER	DATE	STATION	DESCRIPTION
NEW DESIGN	09/21/2018	DATE	09/21/2018				
SHEET CHECKED	NCF	DATE	09/21/2018				
AS BUILT DETAILS	DATE						



LEGEND

TYPE OF WETLAND IMPACT	SHADING/HATCHING
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	



STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
WETLAND IMPACT PLAN			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13065WETL	13065	25	25